TECHNOLOGY DEPT.

OCTOBER, 1951

Telephone and Management Engineer

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THE NATIONAL TELEPHONE MAGAZINE

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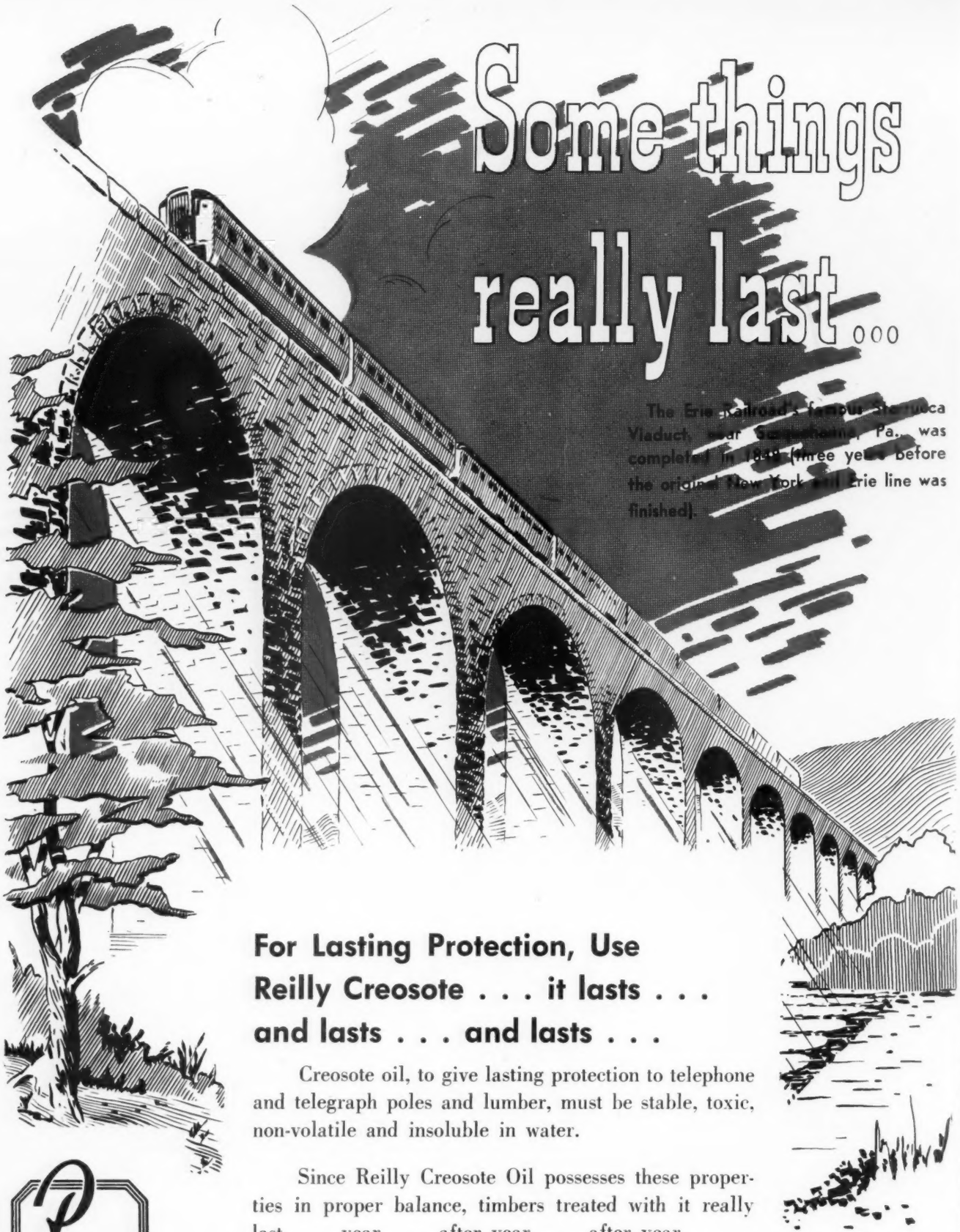

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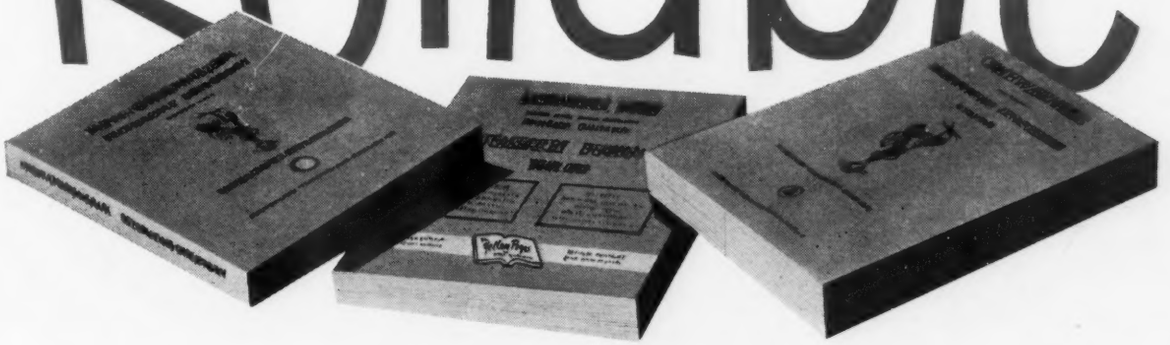

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Across The Editor's Desk

Thank you! The Staff thanks all of our friends that took the time to drop by and say hello to us during the convention just passed. Unfortunately it is our job to also report the meeting which necessitates that many of us keep on the jump during the entire meeting. This issue was prepared during the actual convention days and represents quite a few midnight hours for our Staff. We enjoyed seeing you and the challenge of bringing this report to you immediately following the adjournment of sessions.

• • •

Welcome to the latest of the house publications "THE LEICH LINE" published by The Leich Sales Corporation. HOWARD BERSTED is the Editor of Vol. 1 No. 1. The front cover was very appropriate: a new baby displaying the latest in cheesecake.

• • •

A "Well-Done" to A. B. GORMAN, editor of the LINCOLN TELEPHONE NEWS, the magazine of the Lincoln (Neb.) Tel. & Tel. Co. Their current issue carries an insert addressed to employees telling them they need more people just like their readers to work for the Lincoln company. You public relations men should write Gorman or Merle Hale for a copy of the insert.

• • •

Here is a public request from the Editor addressed to J. C. CROWLEY, JR., secretary of the Minnesota Telephone Association, for an article to appear in this publication on his observations during a recent vacation jaunt through the West and Northwest. His Bulletin of late September gave some of the highlights and quite a few worthwhile tips to managements of Independent telephone companies. The enclosure in the Bulletin was a stuffer titled "Party Lines" which is printed and published by John Withy of St. Paul that could serve as a bill stuffer for any company in the U. S. Address Mr. Withy at 290 Endicott on Robert, St. Paul 1, Minn. The cost of the stuffers is quite reasonable and we recommend their use.

The National Telephone Magazine

Telephone and Management Engineer

OCTOBER, 1951 VOL. 55, NUMBER 10

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FRONT COVER

Members of Missouri Telephone Association, photographed during recent district meeting in Cameron, Mo.

Published monthly by TELEPHONE ENGINEER Publishing Corp.
7720 Sheridan Road - Phone Rogers Park 4-3040 - Chicago 26, Illinois
West Coast Representatives, BRAND & BRAND
1052 West 6th Street, Los Angeles, California
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VOLUME 55, NUMBER 10. Published monthly by Telephone Engineer Publishing Corporation. Office of Publication, Pontiac, Illinois. Executive and Editorial Office, 7720 Sheridan Road, Chicago, Illinois. Subscriptions: U. S., Cuba, Mexico, $3.00 per year; Canada $3.50; in all other countries, $5.00. Single copies, U.S.A. 35 cents. Entered as second class matter at the post office at Pontiac, Illinois, under the act of March 3, 1879.

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ABOVE: British Columbia Telephone Company's new building in Vancouver, providing 12,500 sq. ft. of floor space for "Cedar," "Cherry," and "Bayview" offices.

BELOW: Partial view of new STROWGER AUTOMATIC equipment now serving 13,600 Vancouver subscribers — and readily expansible to its ultimate capacity of 30,000 subscribers.

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How to make a good connection with L-M connectors

One of the best ways to make permanent, low-resistance connections is to select the best connector for the job. There are many connectors on the market; L-M offers a complete line, including some types not otherwise available. This page shows just a few. But for complete information, get in touch with the Kellogg Man, who can work with you on connector and splice problems. Or write for copy of our connector bulletin SC1. Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

L-M KYLE Split Bolt Connectors

Heavy-bodied Kyle connectors are machined from heavy stock. They have clean, accurately machined threads, smoothly rounded edges, close-fitting pad. The nut tightens easily, and the pad slides up smoothly to grip the wire solidly. There's little chance for distortion of these solid connectors, and they'll stand re-use—which makes them economical. For all wire sizes from No. 10 solid to a million circular mills. Available for copper, copperweld, aluminum, or galvanized iron wire. In several types, to assure minimum corrosion.

L-M Fargo Automatic Line Splice

Here is a very fast, easy-to-use splice that just won't slip. In pull tests, the wire breaks before it slips out of the splice. You just stick the ends of the wire into the ends of the splice, give it a tug to set the clamps—and the job is done. No tools needed! Wire readily released so splice can be re-used. Widely used for permanent splices; superlative for emergency work. For solid or stranded copper or copperweld; *not suitable for galvanized iron;* for sizes from No. 8 to 500 MCM stranded.

L-M Fargo Vise Type Connector

Left: An exclusive type with many advantages. One-piece construction, no parts to lose; always threaded; no time lost in starting the nut. An easy unit for linemen to handle and install. Bolts forged and rolled for extra strength. Develops approximately 10 pounds compression for every inch-pound of wrench torque. Binding action of vise-type construction gives a vibration-proof connection. High salvage value. Made of Everdur (bronze) for copper connections and plated Everdur for all-purpose use on copper, aluminum, or galvanized iron wire. Available for wire sizes No. 8 to 1000 MCM.

Right, above: Fargo B-3 Lashing Wire Clamp: hot-dip galvanized malleable iron. One-piece construction. Holds lashing wire to messenger to its full breaking strength. For any size lashing wire and for messengers up to and including ½ inch (25M stranding).

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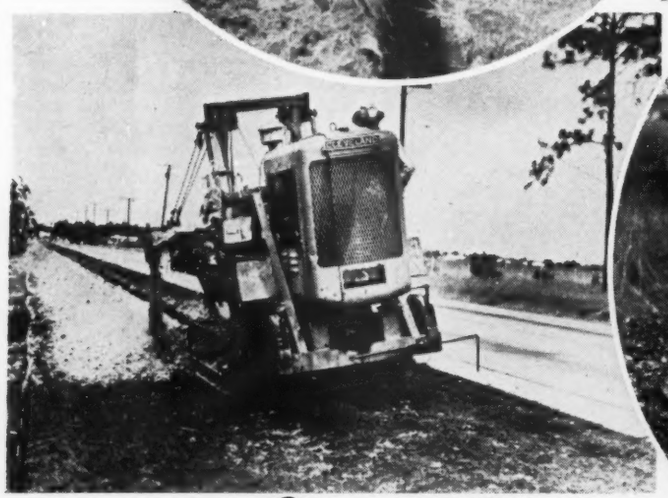

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ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

NEWSLETTERS *on Alternate Weeks*

October 15, 1951

Dear Sir:

By withholding announcement of amounts of controlled materials which will be allocated to American industry for 1st quarter of 1952, Defense Production Administration's (DPA) Programs & Requirements Committee has confirmed general expectation that grants of steel, copper & aluminum will be "tight" in months ahead. If past procedures had been followed, figures should have come out before Oct. 1. While DPA officials were not offering explanations, it was understood DPA has labeled figures as "confidential" for present time.

With three basic metals known to be in short supply, DPA'S move is viewed as effort to stave off appeals for adjustments by industry's claimant agencies in National Production Authority (NPA), with such appeals based on alleged inequities with grants of materials given to other industries,until such time as DPA can firm up its program. As far as communications are concerned, greatest cutback for first 3 months of 1952 is expected in copper, while materials for wire & cable & steel for building constructon will be available in quantities far below those received during last 6 months of 1951.

* * *

Alabama Tel. Co., serving 5 northwest Ala. counties, has taken first steps in starting $100,000 rural expansion program to give telephone service to people outside cities served by its exchanges. Company plans to offer $130,000 of 5% preferred stock to provide money for program. If stock is sold, rural extensions wll be built, W. J. Holladay, gen. supt. of company said.

* * *

"Best in telephone tradition was exemplified" by J. W. Hull, owner of Peninsula Tel. Co. of Washington & employees of Peninsula & Pacific Tel. & Tel. Co., in maintaining telephone service despite extreme personal danger when fire threatened to destroy town of Forks, Wash., on Sept. 20.

As flames moved swiftly toward town, endangering telephone company office & Pacific's toll repeater building, Pacific Tel. & Tel. prepared for the emergency with stand-by equipment & radio-equipped cars were kept available to bridge any gap with radio.

Pacific plant men were also dispatched to Forks to aid in any restoration needed by Peninsula company. When they arrived in endangered town, shrouded by smoke & with burning embers & ash filling

air, they found everyone but Mr. Hull, switchboard operators & fire fighters had been evacuated. Operators manned switchboards night & day and other telephone workers stayed at their posts without regard for personal safety until danger of fire subsided.

* * *

J. Raymond Peterson, assistant vice pres. on staff of vice pres.-operations, Southwestern Bell Tel. Co., in charge of all operating staff functions, joined NPA's Communications Equipment Division staff Oct. 12. Mr. Peterson will serve as consultant to division for 1 month & then succeed Warren Chase as deputy director in Nov. when Mr. Chase returns with Ohio Bell Tel. Co. after completing his 6-month assignment with NPA.

* * *

HIGHLIGHTS:-Mrs. Bertha Craig began second half century of service with Middle States Utilities Co. She is Cainsville, Okla. operator . . . Central Montana Rural Tel. Co-op sent REA loan application to Washington. Co-op plans to serve Fergus, Judith Basin, Petroleum, Musselshell, Wheatland, Golden Valley, Stillwater, Chouteau & Cascade Counties, according to G. R. Milburn of Grass Range, Mont., pres. . . . Citizens Tel. Co., Brevard, N. C. completed exchange building, is proceeding on dial conversion . . . Mutual Tel. Co., Mediapolis, Ia., installed new switchboard . . . Surry Tel. Membership Corp., Elkin, N. C. announced 500 sign-ups to date . . . L. J. Olig, Waverly, Minn., purchased Sleepy Eye (Minn.) Tel. Co. . . . Floyd Ross heads committee of Uintah Basin Tel. Co-op. Co-op recently received REA approval of $449,000 loan . . . Navasota (Tex.) Tel. Co. acquired Anderson, Shiro, & Richards, Tex., lines from Three States Tel. Co. . . . Grant Peterson succeeds E. T. Hackard as manager of Iowa-Ill. Tel. Co., Donnellson, Ia. Company plans $50,000 conversion and improvement program.

State Tel. Co. completing automatic conversion program at Coxsackie, N. Y. . . . Interstate Tel. Co. purchased Rosalie (Wash.) Tel. Co. for $38,600 . . . Carolina Tel. & Tel. Co. installing automatic equipment at Henderson, N. C. in million and half dollar improvement program . . . Fred Scheining, Jr., Junction, Tex., purchased Ingram Tel. Exchange for $75,000. Exchange serves western section of Kerr County, Tex.

Newly formed Pierce (Neb.) Tel. Co. completed exchange building, plans automatic installation. . . . Grandin-Gardner Tel. Co., Gardner, N. Dak. filed articles of incorporation, asked REA loan allocation . . . Rural Tel. Co. (Pelham, Minn.) voting on proposal to sell company to Arvig brothers . . . Chairman Owen Clarke of Washington Public Service Commission, who has headed that agency since its creation in April, 1949, resigned, effective Sept. 15, to enter private law practice in Yakima, Wash. Washington Governor Langlie appointed Commissioner Jerome K. Kuykendall as new Chairman.

Ray W. Smith, Editor

Q. Please advise what method should be used in sealing the ends of lead-covered cable on aerial construction until it is spliced.

A. In the past, it generally has been the practice to seal the ends of cable with solder after it has been cut to prevent the entrance of moisture before splicing.

We are advised lately, however, that a new compound known as "airseal" is now being used successfully for this purpose and that it is made more easily and quickly than the soldered seal. This compound is moulded over the end of the cable to form an impervious seal and prevents moisture from reaching the paper-insulated conductors of the cable.

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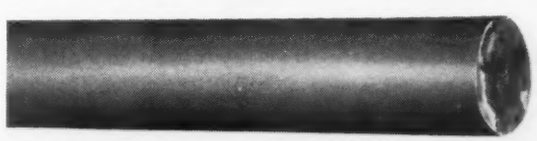

OLD WAY
With Solder

NEW WAY
With AIRSEAL

*Article reprinted from Ray Blain's "Plant Man's Quiz," July 14 Telephony

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STANDARD HANDBOOK FOR ELECTRICAL ENGINEERS—8th Edition

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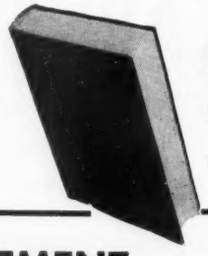

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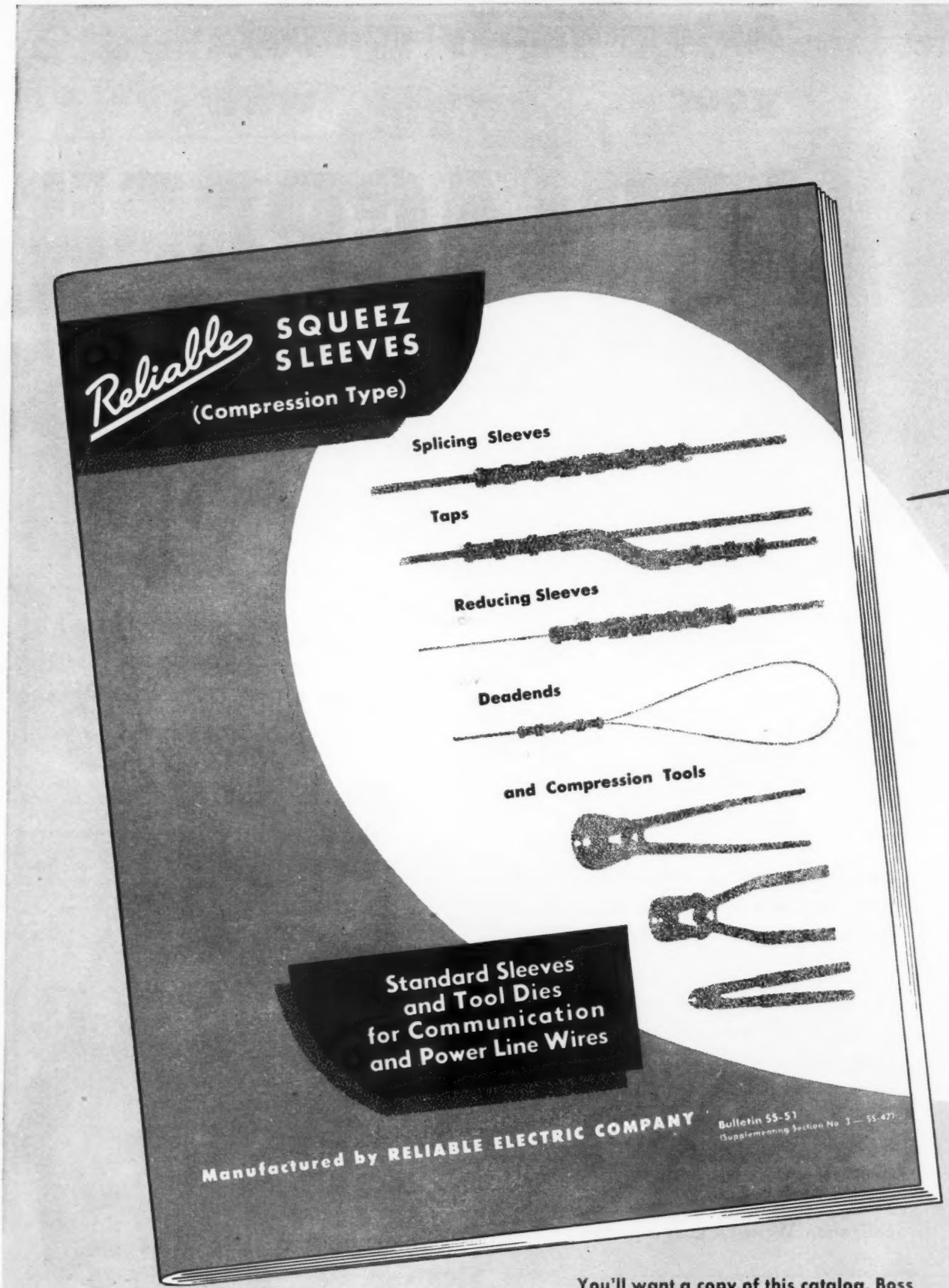

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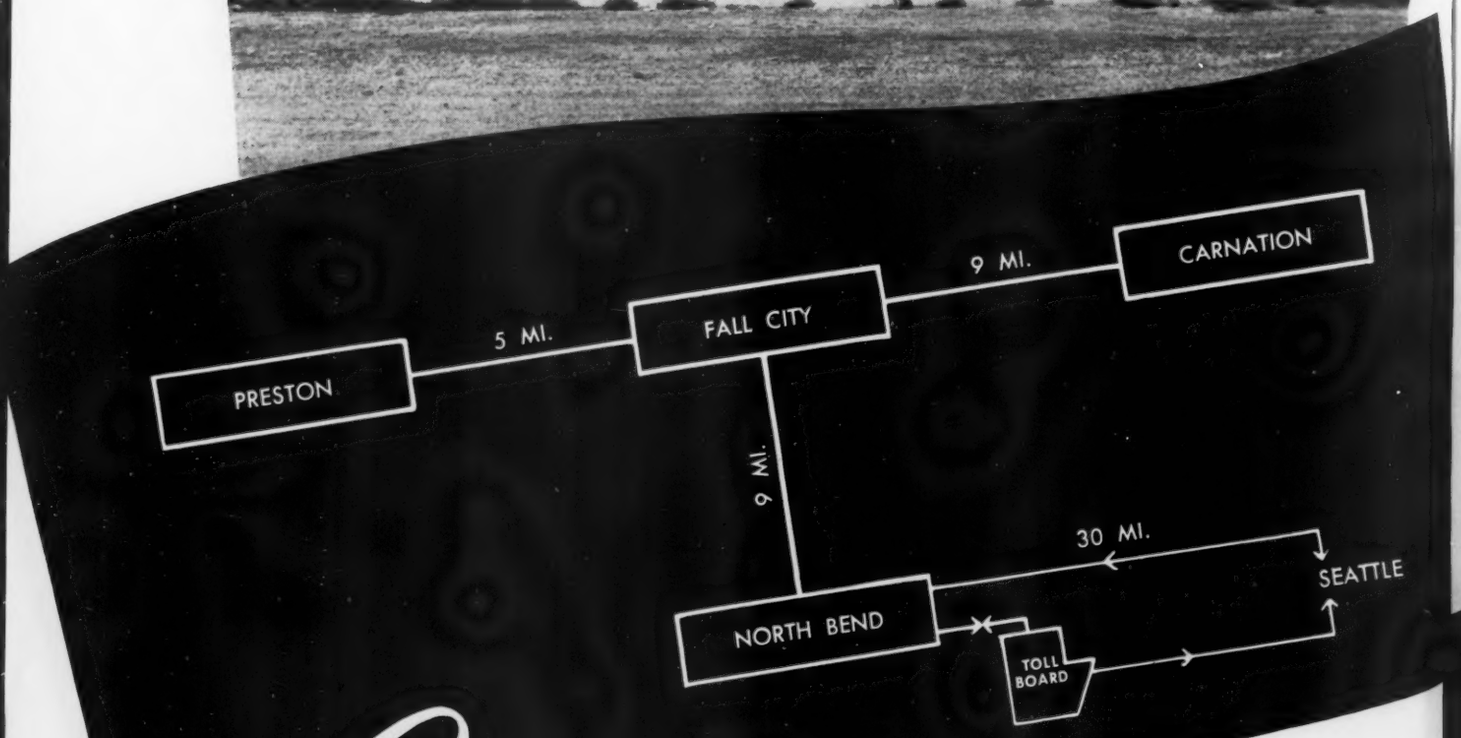

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CASCADE *Shows How to SPEED TOLL SERVICE and REDUCE ERRORS*

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A number of additional time-and-cost-saving features will be installed with the North Bend *Crossbar* (1300 stations). All inter-office trunks will be used for both toll and free service. Each exchange will be linked by universal numbering—subscribers in any of the towns can call each other direct. The toll operator at North Bend will have universal busy verification. All local calls will be automatically timed. . . . And these are only a few of the *plus* features that Kellogg *Crossbar* offers YOU!

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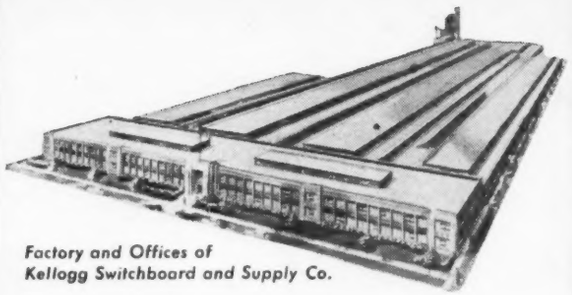

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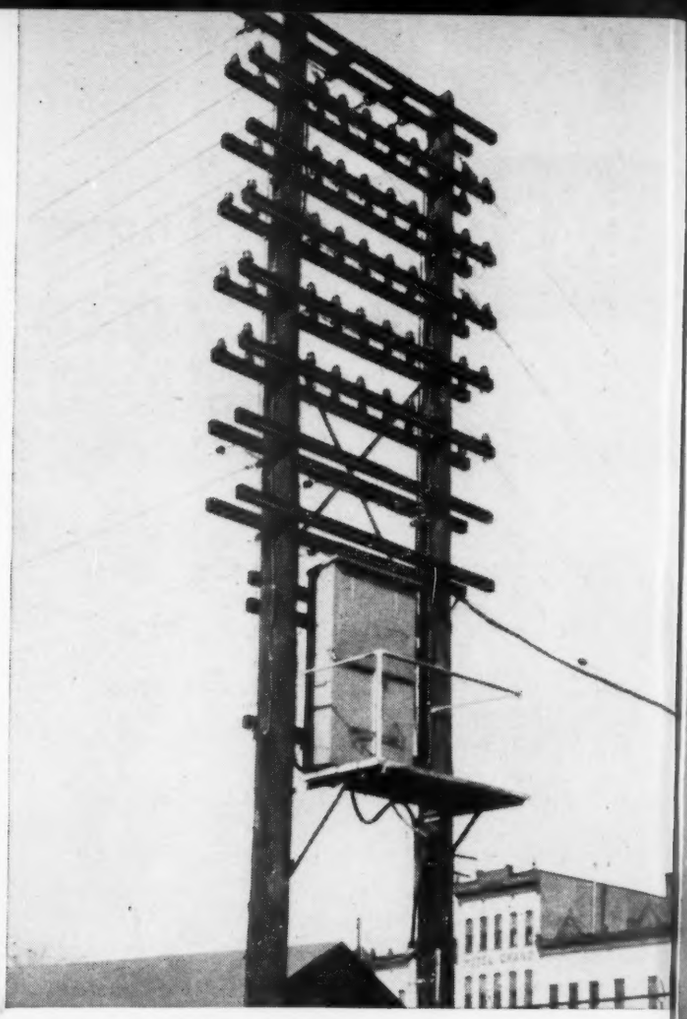
Manufacturers as well as distributors of the finest quality equipment and supplies for the independent telephone field for over fifty years.



Economy in Overhead Construction is assured when crossarms manufa tured by THE CONTINENTAL CROSS-ARM COMPANY, INC., are part of your wire and pole installation . . . they represent the wisest i vestment any telephone company can make. Crossarms are made of full seasoned American woods—built to sound standards of dependabili

Long Life Expectancy—is built into pressure-treated Southern Pine Poles and Crossarms. Carefully and thoroughly treated by the AMERICAN CREOSOTE WORKS, INC., these poles have the extra durability required for dependable service under the toughest climatic conditions. For long lasting, stronger poles use "Pressure-treated Southern Pine."

for **EASIER ORDERING**
PROMPT HANDLING
QUICK SHIPMENTS

...send your next order to KELLOGG

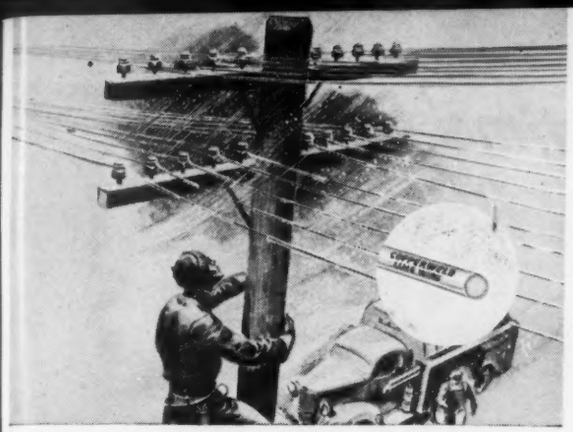
When you order from Kellogg, you fill out just ONE order form for *all* your line supplies. Saves you time and work! Then your order gets prompt attention by experienced telephone men. No chance for slip-ups here! Finally, we ship quickly, from the distribution point nearest you. It's fast, sure service, and every item is *guaranteed!*

For Service from a Nearby Distribution Point, Order Your Line Supplies from

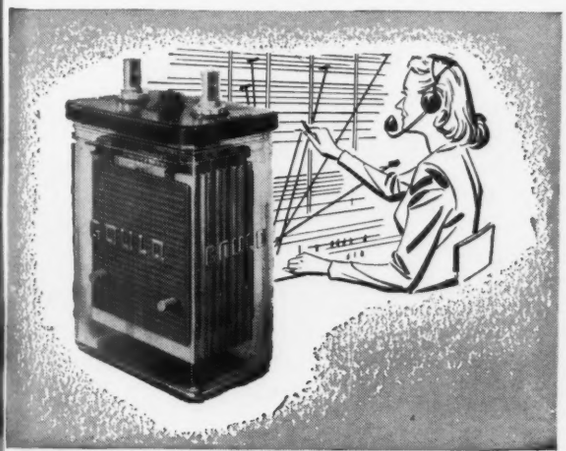
KELLOGG SWITCHBOARD AND SUPPLY
SUPPLIES

Factory and General Offices: 6650 SOUTH CICERO AVENUE, CHICAGO 38, IL
Branch Offices: KANSAS CITY • SAN FRANCISCO • ST. PAUL • LOS A
DALLAS • PORTLAND, OREGON

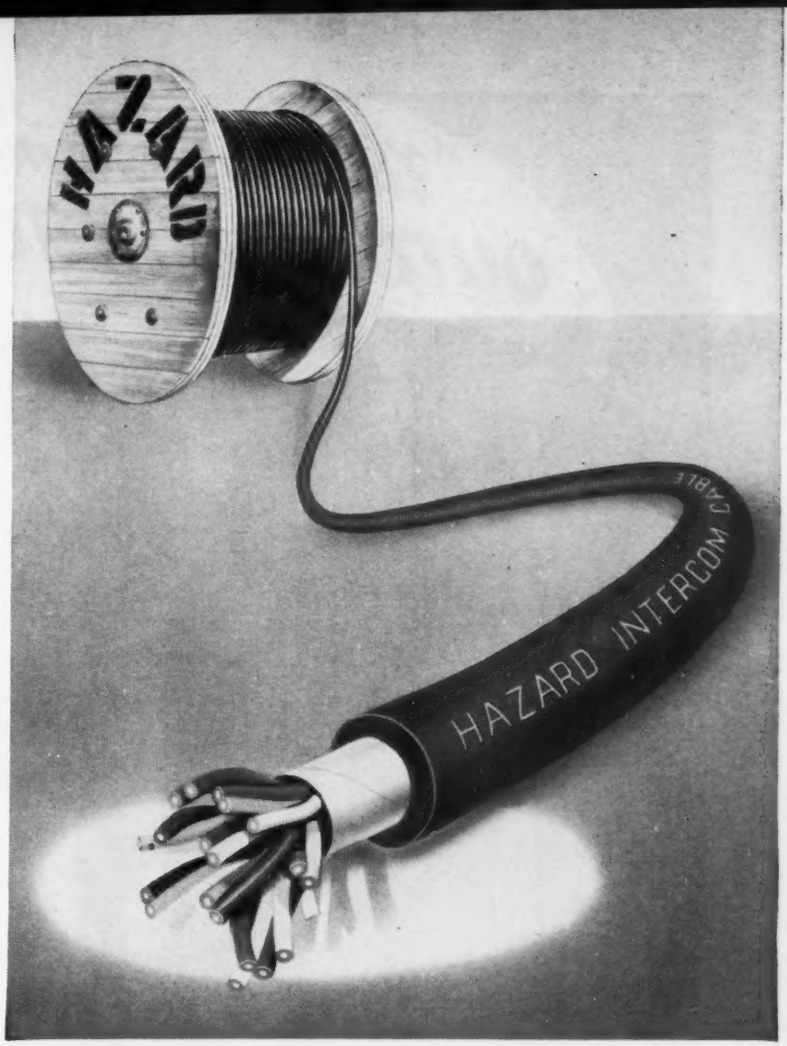
ALL OF THE ABOVE ITEMS MAY BE QUICKLY AND CONVENIENTLY ORDERED F



Be Prepared for Severe Weather with Copperweld Line Wire. The alloy steel core provides rugged strength—permits longer and safer spans. The molten-welded copper covering prevents corrosion and furnishes high electrical conductance. Made by the COPPERWELD STEEL COMPANY.



Your Battery Problems are Solved when you put Gould Planté and Floté Batteries to work. Unique features of design cut maintenance and charging costs, lengthen life and reduce replacements. Made by GOULD-NATIONAL BATTERIES, INC., a leader in their field.



For Better Talking Characteristics try Hazard Multi-Pair Intercom Cable manufactured by the HAZARD DIVISION of THE OKONITE COMPANY. Low capacity conductor insulation provides excellent speech transmission. Tough, outer sheath resists oil, flame and moisture. Available for immediate shipment in 6-, 11-, 16-, and 26-pair assemblies.

"Trouble Shooting" Expense!—Install PARSON ELECTRIC COMPANY'S top quality p wire. Great tensile strength, high conctivity, and perfect adhesion are some of its lities. This drop wire available in Copperd or High Tensile BB Bronze.

Superior Performance! Rely on the Ray-O-Vac 6 telephone cell for top performance. The RAY-O-VAC COMPANY has perfected a specially compounded mix for telephone service which permits these cells to give lower cost per hour of telephone service.

Modern Cable Saves Money 3 Ways—Ansonia Ankoseal, the modern, all-plastic, light-weight cable costs less to buy in the popular sizes, costs less to install, costs less to maintain. Available for aerial, duct and direct burial use. Made by THE ANSONIA ELECTRICAL CO.

E KELLOGG SWITCHBOARD AND SUPPLY COMPANY

Here's a girl who's *mighty* glad that outdoor paystations stay open, for all the stores are *closed!* Thousands of people, just like her, prefer outdoor paystations at *all* hours because of their easy accessibility. *Everybody* likes outdoor paystations — and they earn revenue 24 hours a day.

That's Why AUTELCO PAYSTATIONS PAY -outdoors, too!

Progressive companies find that one paystation earns four times as much as a subscriber station! Autelco Paystations, attractive booths, and clearly-visible signs make a combination that quickly pays for itself, and is speedily accepted by the community. Check the spots now where outdoor paystations could earn extra revenue for you. Write today for new Circular No. 1724, illustrating profitable, 10-cent Autelco Paystations, and kits to convert paystations to the 10-cent rate.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: Automatic Electric Sales Corporation
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

AUTHORIZED DISTRIBUTORS FOR AUTELCO PAYSTATIONS • Automatic Electric Sales Corporation • Graybar Electric Company
Kellogg Switchboard & Supply Company • Leich Sales Corporation • The North Electric Mfg. Company • Stromberg-Carlson Company

LOWELL

IS A LEADING MANUFACTURER

of Top Quality Telephone Wires for Telephone people who appreciate that lasting installations reduce cost.

Neoprene Jacketed Drop Wire for the toughest assignments and highest performance standards, with adhesion capable of withstanding great stress. Premium grade materials and extra care in manufacturing and testing assure the user of drop wire which is highly resistant to compression and abrasion. Write us today for samples, prices and technical data.

•

LOWELL

- **NEOPRENE**
  JACKETED AND RUBBER INSULATEL
- **DROP BRIDLE WIRE**
  WITH BRONZE, COPPERWELD OR COPPER CONDUCTORS, BRASS FLASHED OR TINNED

All Lowell Telephone Wire is thoroughly tested for physical and electrical characteristics in competely equipped, modern laboratory and inspection departments, and manufactured under rigid quality control.

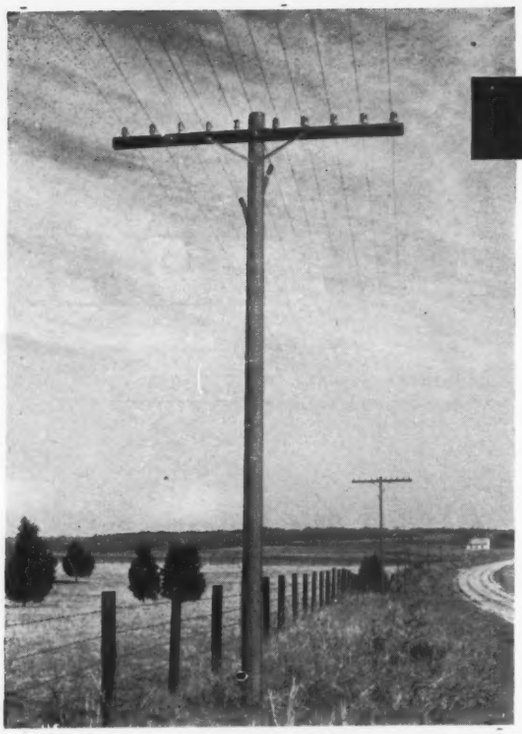
A complete line of Insulated Telephone Wire—outside or inside.

Distributed by: **THE TELEPHONE REPAIR AND SUPPLY COMPANY, 1760 Lunt Avenue, Chicago 26, Illinois**

• • • LOWELL

INSULATED WIRE DIVISION

The Overlakes Corporation • LOWELL, MASSACHUSETS



MOST DURABLE

Taylor-Colquitt
VAPOR-DRIED POLES

Taylor-Colquitt's exclusive process of drying timber by passing hydrocarbon vapors over it permits more uniform distribution of creosote during the treating process. This deeper and more uniform penetration enables vapor dried poles to retain their preservative longer and thus makes them the most durable available.

Longer life coupled with 20 to 25 per cent greater strength and lower weights makes Taylor-Colquitt poles the outstanding value for all types of overhead line construction. Specify Taylor-Colquitt Vapor Dried Poles.

Taylor-Colquitt Vapor Dried Poles are distributed to independent telephone companies exclusively by Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7, Illinois.

TAYLOR-COLQUITT CO. TIMBER CONSERVATION T-C

TAYLOR-COLQUITT CO.
SPARTANBURG, SOUTH CAROLINA

PLANTS AT SPARTANBURG, SOUTH CAROLINA AND WILMINGTON, NORTH CAROLINA

LENZ SWITCHBOARD CORDS

LOOK FOR LENZ THIS MARK OF QUALITY

For 47 years we have been manufacturing Cords, Wires and Cables for the Telephone Industry.

Lenz NYLON Switchboard Cords have been in continuous service for over five years. Improve your service plus greater economy with these outstanding cords. Write today for complete information.

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Chicago 4, Ill.

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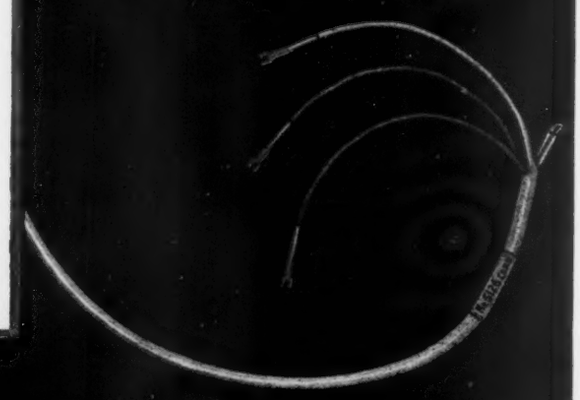


LENZ ELECTRIC MANUFACTURING CO.
1751 N. WESTERN AVE., CHICAGO 47, ILL., U. S. A.
"IN BUSINESS SINCE 1904"

Do YOU Have Any of These Problems?

. . . Party Line Difficulties

. . . Overloading on Calls to Information

. . . Too Many "Wrong Number" Calls

. . . Delinquent Subscribers

. . . Material or Equipment Shortages

. . . Need for More Adequate Rates

If you do—follow the lead of hundreds of other progressive Independents who have been letting the Telephone Advertising Institute acquaint telephone subscribers with all of their company's service and operating problems . . . plus continually selling subscribers on the value of their telephone.

Telephone Advertising Institute's advertising and public relations material is prepared by professionals skilled and experienced in telling your story to the public. Working as a team with active telephone men on the U.S.I.T.A. Advertising Committee, we have developed a program that has proved itself over and over again to be one of the best business investments any telephone company, large or small, can make. And our service is designed to fit the advertising budget of even the smallest company.

We will gladly tell you more about this service that represents so much to you, and for so little money. Write us today, without obligation, for full information.

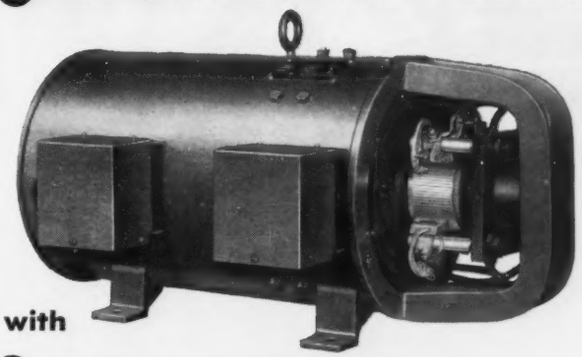
TELEPHONE ADVERTISING INSTITUTE

Advertising Voice of the Independent Telephone Industry

326 W. MADISON ST., CHICAGO 6, ILLINOIS

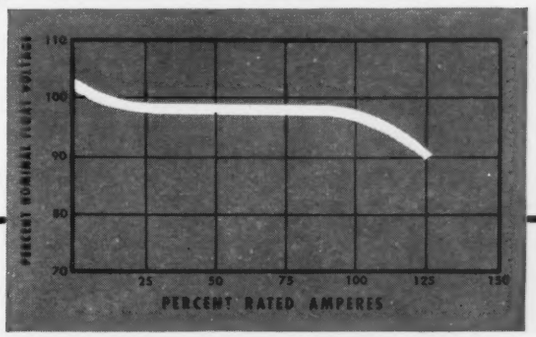
FOR *Time-Proved* *Specify* BATTERY-CHARGING PERFORMANCE

1 E. P. Diverter-Pole Motor-Generators



with

2 Inherent Constant Voltage . . .



Constant voltage delivered by E.P. Diverter-Pole Motor-Generators serves three important functions:

A—DECREASES RELAY MAINTENANCE. Keeping the voltage from rising too high helps to prevent "slapping" of the contacts that may result in misalignment, pitting and burning, and preserves the sensitive adjustment of the relays. High-coil current . . . with accompanying insulation breakdown, shorting and burning-out . . . is avoided.

B—INCREASES BATTERY LIFE. Operating records of many exchanges show that the E.P. Diverter-Pole Battery Charger increases battery life from six to fourteen years. High battery temperature, excessive gassing, and undue breaking down of the active cell material are prevented to assure the longest possible battery life.

C—IMPROVES VOICE TRANSMISSION. To assure satisfactory voice transmission, the Battery Charger must maintain the output voltage of the battery as close as possible to a constant value. Transmitters may become noisy if they are subjected to an excessively high voltage, and may have to be replaced because of permanent damage.

Write for Bulletin 209

EP

THE ELECTRIC PRODUCTS CO.

1729 CLARKSTONE RD., CLEVELAND 12, OHIO, U. S. A.

STANDBY POWER

that will Stand Up in any Emergency

Cloudbursts . . . high winds . . . ice storms . . . in the worst weather imaginable, a Homelite Generator is always ready for instant service in case of normal power failure.

That's important because emergency power is generally needed in rough weather. Light, compact Homelite Generators are especially designed to start and *keep* running under the worst conditions. The protected air intake keeps the engine from choking on dust . . . the damp-proof ignition system insures quick starts, sure performance, even in heavy rains. Even in icy weather, the sturdy Homelite delivers the power.

For standby power in central exchanges or relay stations . . . for inside or outside installations, you can't buy a finer generator than a Homelite.

Write, stating power requirements and we'll tell you which low-cost, reliable Homelite Generator will fill your needs.

Manufacturers of Homelite
Carryable Pumps • Generators
Blowers • Chain Saws

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE
CORPORATION
1210 RIVERDALE AVENUE • PORT CHESTER, N. Y.

REDUCES COSTS

all along the line

Copperweld NON-RUSTING Line Wire

TRADE MARK

GRIP-FLEX[38]

The Ideal Insulator Tie for Use with Copperweld Line Wire

It is a known fact, among the leading telephone and railroad men of the world, that Copperweld* Line Wire is unequaled for overall economy and performance.

In addition to life-long protection against corrosion, Copperweld Line Wire provides much better transmission characteristics for voice and high frequency circuits than all other types of high strength conductors—is 2 to 3 times stronger than hard-drawn copper wire—has greater tensile strength than any wire of comparable electrical properties.

Light in weight, pliable, and easy to string—Copperweld has that high degree of strength necessary for safe, long span construction as well as the ruggedness needed to withstand severe weather, such as sleet, ice and high winds.

Yes, the protection afforded by Copperweld really lasts! So, wherever you need a line wire with the high conductivity and rust-resistance of copper plus the rugged strength of steel, play safe—install Copperweld. Remember that Copperweld products have been successfully serving industry for more than thirty-five years.

Engineering Data Sent On Request. Write for it Today.

COPPERWELD STEEL COMPANY

Glassport, Pa.

SALES OFFICES IN PRINCIPAL CITIES

*Trade Mark

SOLD BY LEADING DISTRIBUTORS

Copperweld Line Wire Costs Less because it Lasts Longer

today's "guided planning" is tomorrow's communications insurance

EVEN Lloyd's of London probably would hesitate to write a firm policy insuring delivery of the exchange equipment that any Independent Telephone Company will need in, let us say, 1953. Nevertheless, it is a firm conviction here at North that YOU can virtually write your own insurance of delivery.

We do not believe in miracles, but we know the miraculous effect of "guided planning" in overcoming shortages, restrictions and limitations. By guided planning we mean sitting down with qualified communications engineers *far in advance of actual needs* and letting them guide your planning with the aid of their vast experience in the logistics of installation. This means that our production plans can be geared, on a long-range basis, to the future needs of independent companies. Just sort of synchronizing supply to demand.

Speaking for ourselves, we say . . . set your planning sights years ahead; note the steps you must take to achieve your ultimate plans; then, *before* your estimates become "immediate" . . .

NOW is the best time ever to expand the income of your existing plant by selling more PABX service. Use North's PABX sales plan; it's FREE.

CALL ON NORTH

THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of ***ALL RELAY*** *Systems of Automatic Switching*

1430 South Market Street, Galion, Ohio, U.S.A.

Are you turning in all your SCRAP?

Don't wait for "George" to do it

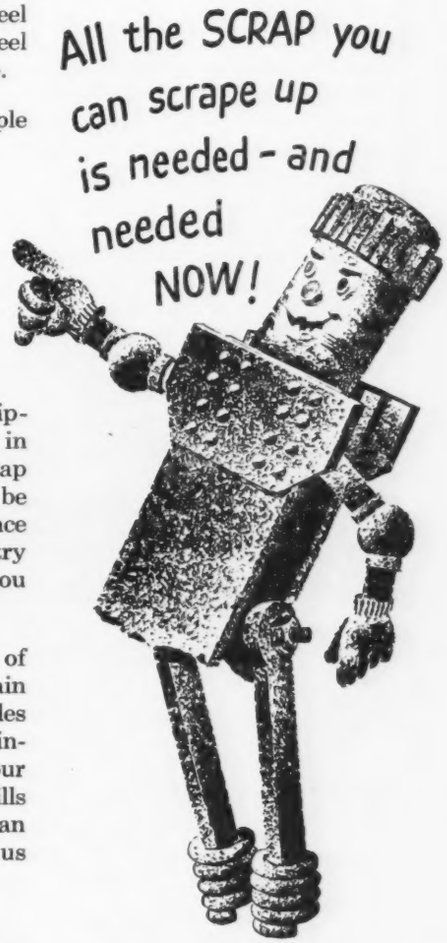
IF you are a steel user, this important job of getting more scrap back to the mills is directly up to *you*. You just cannot afford to sit idly by while the scrap shortage gets worse. For unless everyone really pitches into this job of digging out all the scrap possible, steel production is bound to suffer, and every steel user, in more or less degree, will suffer too.

More scrap means *more* steel—it's as simple as that.

Right now some mills have only a bare two-days' supply of scrap on hand. Others have even less. Some steel-making furnaces already have had to shut down for lack of scrap. The situation is serious. Only you can help improve it.

By turning in every piece of worn-out equipment, every obsolete tool and machine, in fact every pound of iron and steel scrap you can comb out of your plant, you'll be helping relieve the worst scrap shortage since Pearl Harbor days . . . and the steel industry will be able to produce more of the steel you need.

Remember—it takes at least one-half ton of scrap to make one ton of steel. To maintain steel's present high production schedules requires more than 1400 carloads of industrial scrap *every* day. So turn in your scrap—ALL your scrap—and keep the mills rolling. This is more than a shortage. It's an emergency that vitally concerns you—and us—and the Nation.



You'll find your local scrap dealers listed in the yellow pages of the phone directory.

USS TRADE MARK

1-1348-A

This page would ordinarily be used to tell you about

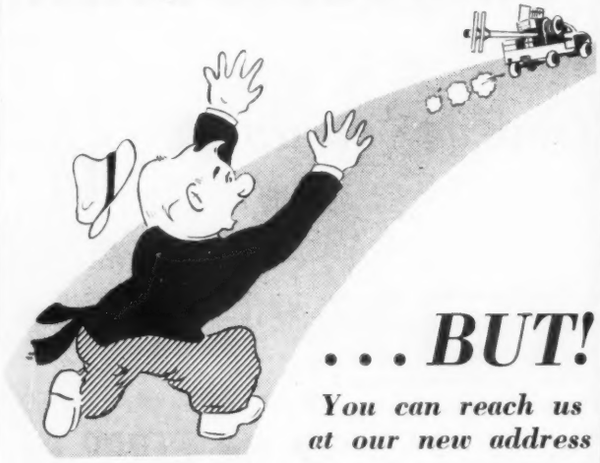
AMERTEL TELEPHONE & TELEGRAPH WIRE

but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

Buckeye has moved



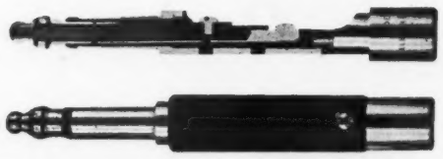
. . . BUT!

You can reach us at our new address

for the same exceptional service that Buckeye customers expect. We hope our new quarters will allow us to become even more efficient in answering the supply problems of the telephone industry. Our expansion in a way is a reflection of your good faith in our ability and a constant maintenance of friendly business relations. We intend to continue meriting your good opinion of us and we know there is only one way to do this, that is, to give you what you want when you want it.

BUCKEYE TELEPHONE & SUPPLY CO.
1250 KINNEAR RD. COLUMBUS, OHIO

Avoid Shorts and Trouble
With TFA Plugs



The plastic insulation injected between the conductors stays solid. It covers the edge of the brass shell, positively preventing cause of most shorts. Invented, and used exclusively by TELEFON FABRIK AUTOMATIC A/S for over a generation.

These plugs provide unsurpassed precision in machining, solidity of construction, and high insulation safety.

Available as replacements for all popular two-and three conductor plugs.

Write for list, or order, from either United States distributor.

Sole Distributors in United States

BUCKEYE
Telephone & Supply Co.
Columbus 6, Ohio

SUTTLE
Equipment Co.
Lawrenceville, Ill.

TELEFON FABRIK
AUTOMATIC A/S
AMALIEGADE • COPENHAGEN, DENMARK

DRILL CONCRETE
70% Faster with
TILDEN ROTARY KONKRETE KORE DRILLS

Why? *Only Tilden has this patented slot . . . expels cuttings automatically!*

- Diameters 3/16" to 4" in stock
- Diameters above 4" made to order
- Interchangeable shanks up to 5 feet
- ½" to 1" drills cut up to 6" per min.
- Drills 200" before resharpening (including embedded steel, glass, rock)
- Free factory sharpening service
- Use with any electric or air drill
- Quiet operation - no hammer

Write for FREE CATALOG today!

Tilden Rotary Konkrete Kore Drills are standard equipment with utilities, municipalities and thousands of contractors. Used by the U. S. Navy, Air Force and C. A. A.

TILDEN TOOL
MANUFACTURING COMPANY
209 Los Molinos • San Clemente, Calif.
BRANCH OFFICE
1144 W. Washington Blvd • Chicago 7, Ill.

SOLD BY BETTER SUPPLY HOUSES EVERYWHERE

HEAR CLEARLY *in the*
QUIET ATMOSPHERE *of a*
BURGESS-MANNING ACOUSTI-BOOTH

You can hear easily . . . talk comfortably in the noisiest surroundings . . . in a Burgess-Manning Acousti-Booth. Thick walls of sound-absorbent material soak up noise. Conversations are clearer . . . "private." Airy, no door . . . easily moved . . . sturdy construction.

NOTE THESE OUTSTANDING FEATURES

- Quiet inside
- Airy interior
- Movable—lightweight
- Sanitary—open construction
- Low maintenance cost—no movable or breakable parts
- Suited to any location

MAIL COUPON FOR FREE BOOKLET
Burgess-Manning Company
Architectural Products Division
5970-Q Northwest Highway
Chicago 31, Illinois

Please send me your booklet describing Burgess-Manning Acousti-Booths

Name.....
Firm Name.....
Street.....City.....

WHEREVER YOU USE WOOD..

IN SALT WATER, marine wood-borers give a preservative its severest test. Of hundreds of preservatives that have been tried through the years, BARRETT* *Coal-Tar* Creosote is the only one that has proved consistently effective against teredos, limnoria and other salt-water enemies of wood.

IN FRESH WATER, many preservatives leach out of wood. BARRETT Coal-Tar Creosote resists this leaching action. Being only negligibly soluble in water, it is the preferred preservative for use on submerged wood structures, or those exposed to the powerful action of rapidly flowing water.

IN THE SOUTH, prolonged high temperatures cause light-bodied preservatives to leach and evaporate from the wood, thus exposing the wood to termite attack and decay. BARRETT Coal-Tar Creosote, heavier bodied and of lower volatility, prevents this condition. It stays in the wood longer under all conditions—doesn't "run out" on the job.

IN THE SWAMPS, forces of decay are almost at their maximum of destructive power. High moisture content and infection from other decaying wood and debris are ever-present menaces. Poles properly treated with Coal-Tar Creosote have survived under swamp conditions for years.

IN THE DESERT, crossties broom, shatter and split from extreme dryness and heat. Solutions made with BARRETT Coal-Tar Creosote retard this, and also reduce mechanical wear of crossties through their lubricating action on the wood fibers. In poles, heavy treatment with BARRETT Coal-Tar Creosote substantially reduces checking and splitting.

IN THE NORTH, poles must resist the tremendous weight of frequent sleet storms. Avoid preservatives which *weaken* the wood. BARRETT Coal-Tar Creosote allows poles to retain their maximum strength, and helps to keep the poles at their best and hold the lines aloft.

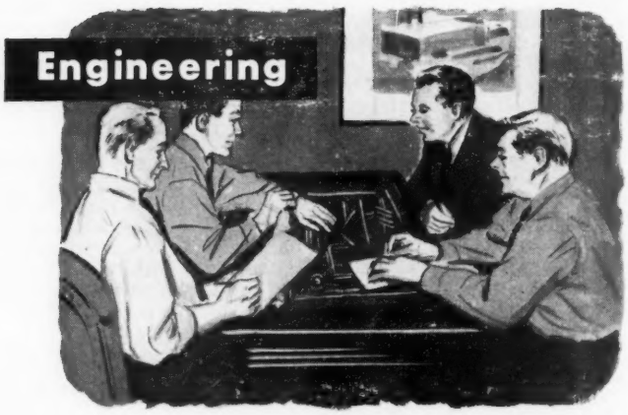
THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

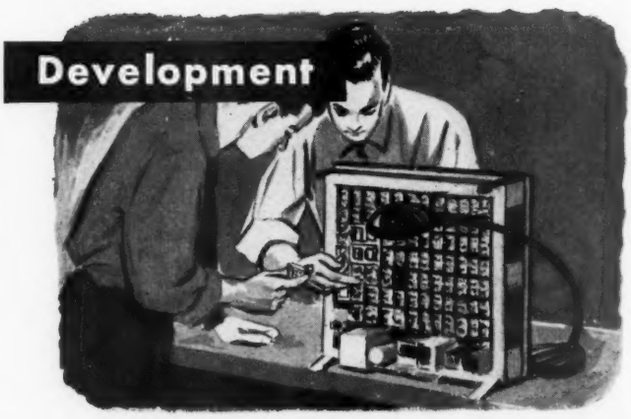
Only coal-tar creosote wood preservative has been used long enough and widely enough to have proved its effectiveness under all conditions.

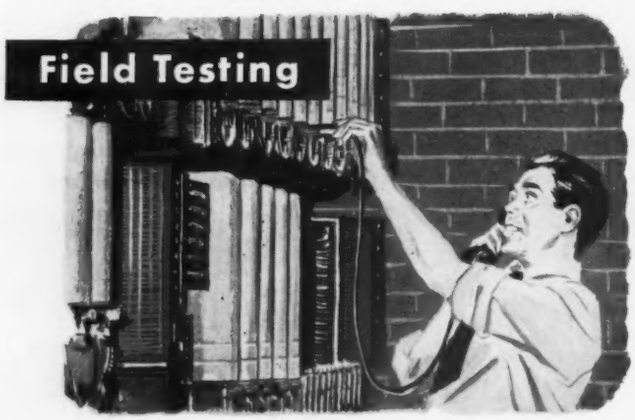
Use Barrett* → **COAL TAR CREOSOTE**

*Reg. U. S. Pat. Off.

A Name that Symbolizes the WORLD'S MOST COMPREHENSIVE TELEPHONE EXPERIENCE







FEDERAL TELEPHONE & RADIO
FTR
AN IT&T ASSOCIATE

Federal

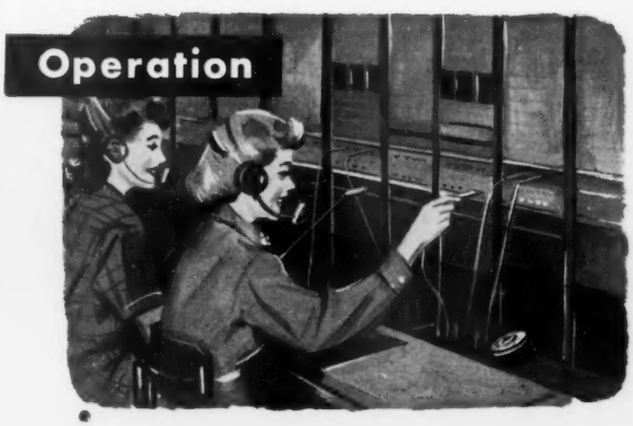
SINCE the beginning of the telephone industry, communications men of many lands have contributed to the incomparable experience that is built into Federal telephone products.

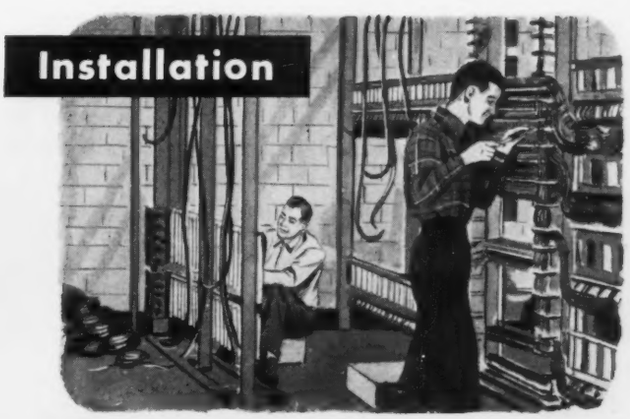
This experience is a composite of the techniques and engineering achievements of Federal's associates in the International Telephone and Telegraph Corporation... the largest international communications organization... serving the public, industry, and government... through research and development laboratories, manufacturing, and nation-wide telephone operating systems.

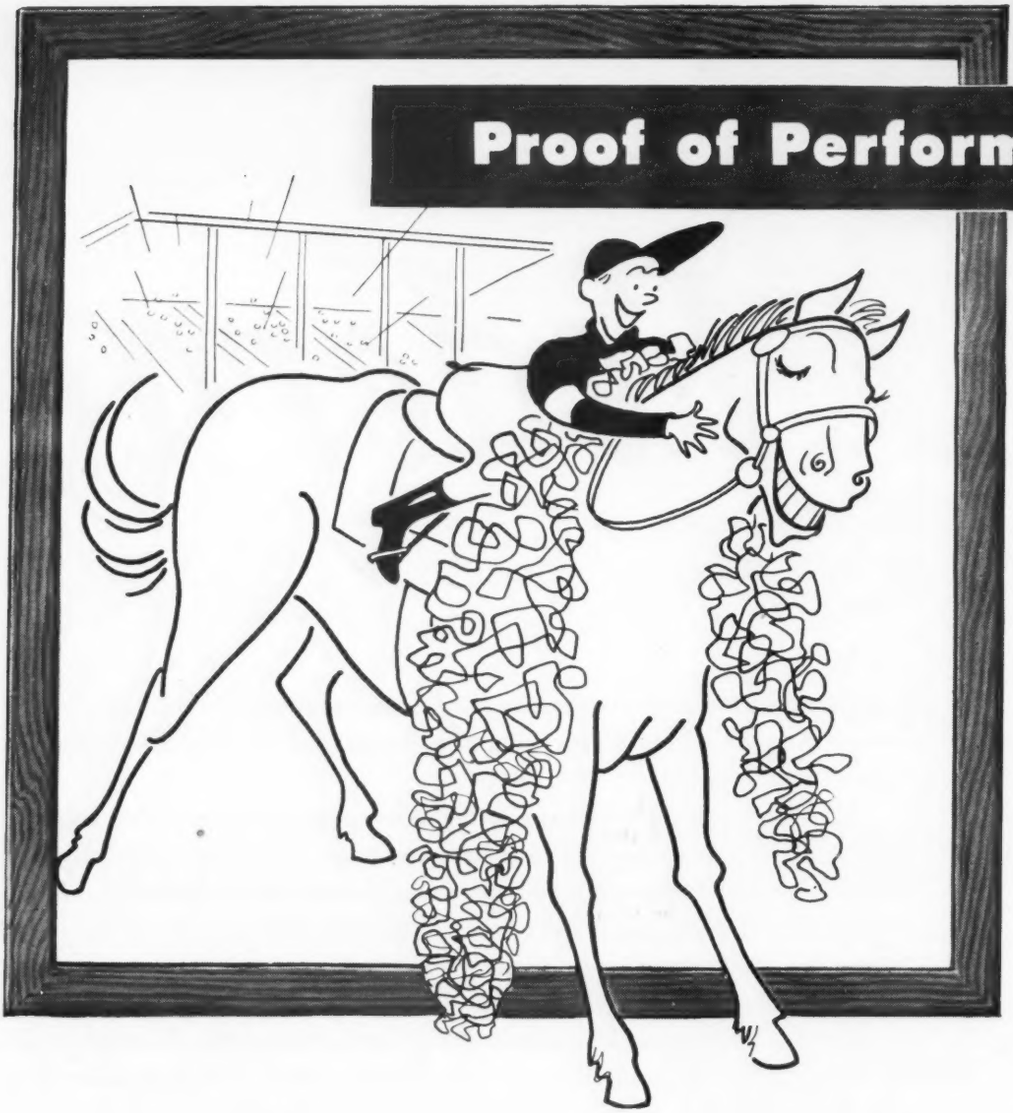
Federal's unlimited access to this world-wide source of telecommunication progress, in combination with Federal's own distinguished record in this field, brings to American telephony "The World's Most Comprehensive Telephone Experience"... makes available one of today's most complete lines of equipment for modern telephone needs . . . dial switching, carrier systems, PABX's, PTM microwave, special switchboards and associated items.

Federal Telephone and Radio Corporation

100 KINGSLAND ROAD, CLIFTON, NEW JERSEY







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EDITORIAL

Bargain-Counter Subscribers

WE ARE IMPRESSED by a statement made by Dr. Herbert Dorau, eminent economist, and its application to the telephone business.

Testifying in a gas company rate case, Dr. Dorau was asked: "Why is it socially uneconomic to fail to reflect present cost levels in public utility rates . . .?"

Dr. Dorau replied:

> "Prices based on original costs are, during periods of inflation and high general levels of prices, uneconomic in that they do not pay the current cost of production and thus result in reflecting the product as bargain-counter attractions. As underpriced bargain-counter goods unfairly sold at less than cost, goods or services so priced only appear to be in such great demand . . . When underpriced utility services are eventually repriced at current cost, as they most assuredly must eventually, much of the unreal demand will melt away. They really didn't want gas at its fair price; they only wanted it at bargain-counter prices . . ."

In other words, a lot of the gas company's customers wanted gas only because it was cheap—and it was cheap because, when current costs of plant and production are taken into account, the gas company was losing money on it.

It seems a safe conclusion that the same thing applies to telephones. Compared to past and present costs of living, the telephone is just about the cheapest utility service there is. It never, even in the old days, took more than a very small percentage of the subscriber's budget. Now it takes even less, percentagewise.

During the past several years the cost of living has gone up about 86%. During that same period, telephone rates have gone up only about 22%.

This question naturally arises: How much of the seemingly insatiable public demand for telephones exists principally because telephone service is so cheap?

And, if you take into consideration the high present costs of adding telephone equipment and plant to take care of additional subscribers, telephone service is cheap at its present levels.

There are three important factors that have held telephone rates down. One is that, during the past several years, telephone companies have done a large part of their financing, for taking care of additional subscribers, by long-term borrowing at low interest rates.

Another is that telephone company rate bases have been calculated in most cases on original cost—which is of course low when compared with current costs.

The third is that commissions have held down the company's rate of return, on that lower than present original cost, to 6% or less.

Now debt money is no longer so plentiful, or so cheap. And as the plant grows at currently high costs, the original cost per average station becomes higher and higher.

Also many telephone companies must now do capital stock financing for much of their future growth, in order to bring their high debt ratio down to a safer basis. To accomplish that they must have a higher rate of return, allowing them to pay dividends reasonably in keeping with dividends paid on the stocks of other established industries.

To the telephone company this question of how many of its subscribers or applicants are bargain-counter customers is even more important than it is to other utilities. The water, gas or electric customer pays for and maintains his own piping or wiring and appliances. But the telephone company furnishes its subscriber everything. Excepting for a nominal connection charge, the telephone company takes all the risk.

With the cost of adding telephones what it is today, no telephone company can afford a very heavy percentage of bargain-counter subscribers.

Telephone rates must continue to go up. And, as they do so, the bargain-counter subscriber is likely to become like the old soldier—and just fade away.

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Announcing

Individually Removable Ja
on Stromberg-Carlson

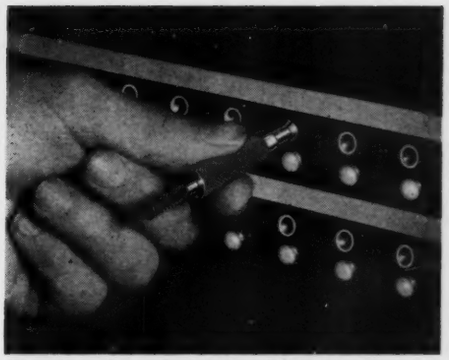
Take a strip of 20 Line Jacks. If one needs repair, what happens to the other 19? Normally, they're *all* out of service — and maybe for a matter of long hours, while the entire strip is removed and the one offender replaced.

That annoying and expensive job is now cut to a matter of minutes — thanks to the new *Individually Removable Jack Sleeves* which are now *standard equipment on Stromberg-Carlson switchboards** — both PBX, local central office equipment and toll board. The accompanying illustrations show how quickly and easily the replacement of one sleeve is made — *while all other lines on the strip remain in service.*

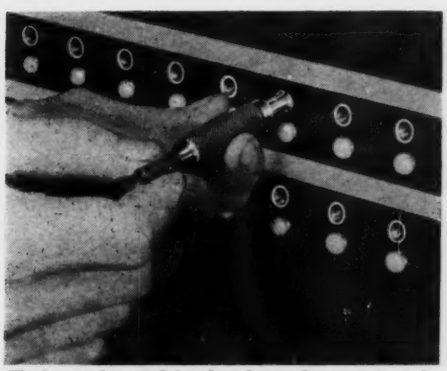
**NOTE: Because of size limitations, not available on switchboards using No. 127 Jacks.*

TELEPHONES, SWITCHBOARDS · SOUND EQUIPMENT AND ELECTRONIC CARILLON

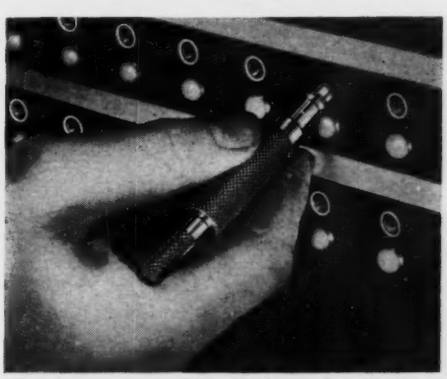
3 SIMPLE STEPS TO REPLACE A JACK SLEEVE



1 Slip the split end of the tool into the sleeve to be replaced. If the end will not enter the sleeve, turn the smaller knurled handle counter-clockwise to change the fit of the end.



2 Tighten the tool in the sleeve by turning the smaller knurled handle clockwise. This *expands* the split end to make a tight fit.



3 Now grasp the tool by the larger knurled section and turn counter-clockwise, thus unscrewing the sleeve. Insertion of a new sleeve is made with the same tool in the same quick, easy manner.

ldJack Sleeves onSwitchboards

Conclusion? Next time you're looking over the field of switchboards, pick the brand with this modern feature which saves at least 80% of old-time maintenance expense!

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Steps up crew efficiency!

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Can be extended to any length, spotted in forty positions throughout a full 360° revolution, and inclined at any angle from 30° to 75°. Easily operated by one man. Safe enough to support 4 times normal working load. Available in sizes having ground-to-platform heights from 23' 6" to 32' 3".

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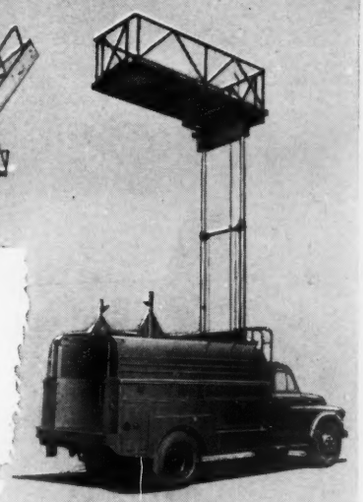
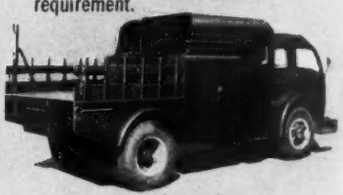


HYDRAULIC TOWER

Available in models having ground-to-platform heights of 25', 28', and 30', for installation on chassis having 1½ ton capacity or more.

GENERAL SERVICE BODY

½, ¾, 1, and 1½ ton models. Can be equipped to meet any operating requirement.



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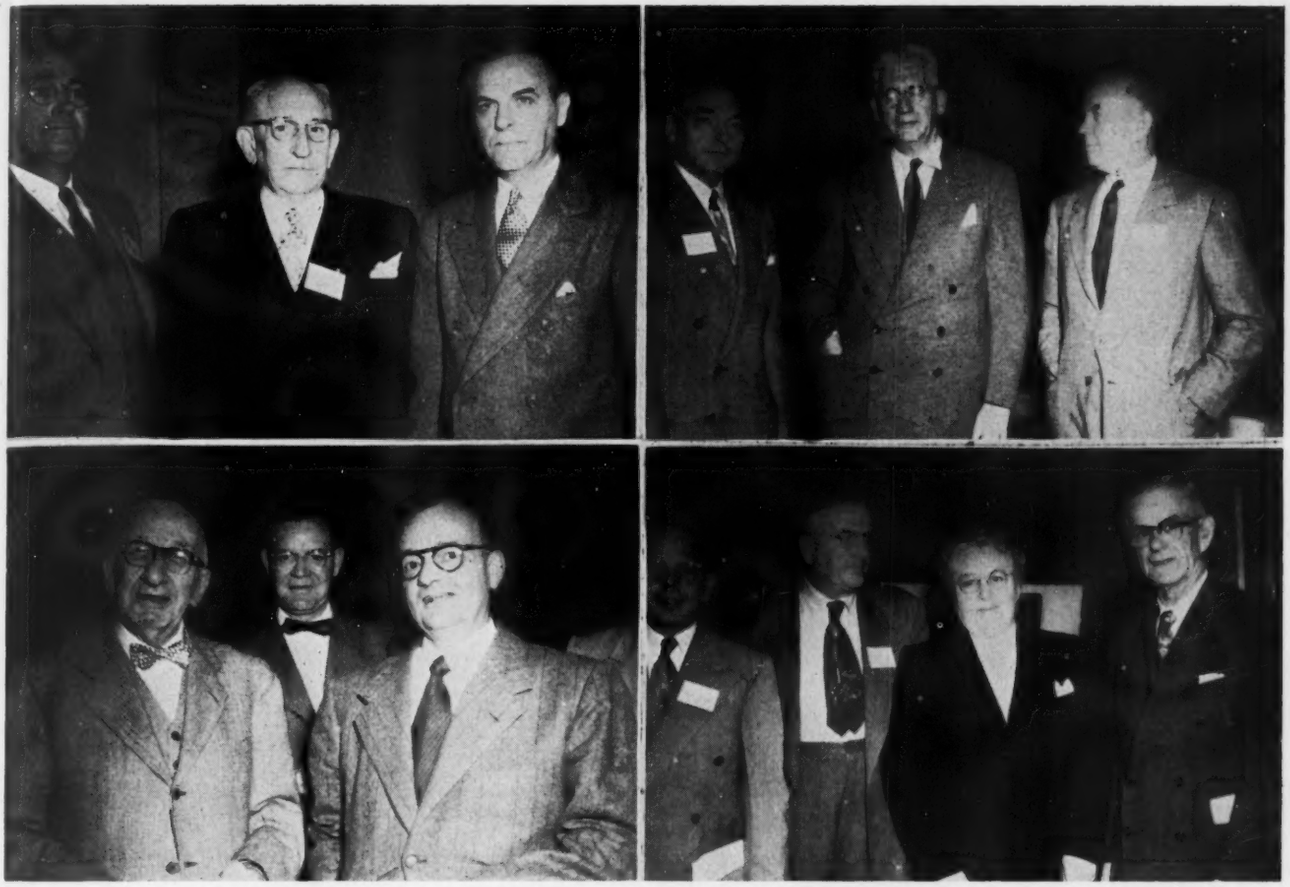

TE&M Camera snapped the above groups of Independents during the recent USITA Convention. Top (l. to r.):—L. W. Hill, Tarboro, N. C., USITA pres.; R. B. Still, Bloomington, Ill., vice pres. of USITA; Clyde S. Bailey, USITA exec. vice pres.; E. M. Blakeslee, Santa Monica, Calif., USITA vice pres.; Sen. Paul H. Douglas, (D. Ill.); R. A. Lumpkin, Mattoon, Ill., USITA director. Bottom (l. to r.):—W. J. Melchers, Owosso, Mich.; Roland T. Beard, Ft. Wayne, Ind.; R. E. Williams, director of NPA Communications' Equipment Division, Washington, D.C.; C. S. Cadwell, Chicago, USITA director; Mr. & Mrs. Wade Dean, Hood River, Ore.; and P. M. Ferguson, Sr., Mankato, Minn.

U-S-I-T-A Holds Annual Convention

By John G. Reynolds

Managing Editor,
Telephone Engineer Publications

THE SMALL Independently owned telephone company—its problems, its hopes and its struggle for survival—received careful, considerate and helpful attention from members of the United States Independent Telephone Association during the organization's 54th annual convention at the Hotel Stevens, Chicago, Oct. 15-17. Out of the many subjects discussed by speakers at the general sessions and departmental conferences, the association's energetic program aimed to the specific end of strengthening what has been the weakest link in the Independent chain, the very small operating company, rated the top spot in importance among the many topics covered during the meeting.

It was a subject of vital importance to each of the 2,650 Independent telephone men and women attending the convention and the officers and directors of the USITA deserve a hearty vote of thanks from all industry members for authorizing the formation of Small Company Regional Committees for the specific purpose of surveying jointly with Bell System representatives those Independent telephone companies that may require strengthening in order that they may be retained in the Independent segment of the communications' industry.

Other addresses and discussions at the convention touched upon all phases of the telephone operating business, and although the familiar word "problems" was repeated time and time again, there was no "viewing with alarm"; instead there was a straight, clear look at the facts and a calm realization that despite difficult problems, the industry can find the answer within its own ranks and prove that the brains and resources and energy that have built the Independent industry and the Bell System can take care of future developments, be what they may.

The convention re-elected the following directors: Frank S. Barnes, Rock Hill, S.C.; Oscar Burton, Tyler, Texas; C. S. Cadwell, Chicago; V. E. Chaney, Chicago; Warren B. Clay, Hutchison, Minn.; Wm. C. Henry, Bellevue, Ohio; Foster B. McHenry, Jefferson City, Mo.; Lewis F. Shepherd, Erie, Pa.; Donald H. Campbell, Rochester, N. Y., and Burton W. Saunders, Springfield, Ill.

Four new directors also were elected: S. A. Lane, Russelville, Ark.,

CONVENTION PICTURES

Additional convention pictures from the TELEPHONE ENGINEER Camera will appear in succeeding issues. This issue was printed immediately following the convention, before some of our pictures were received from the engraver, to enable us to bring you the report while it is news.

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RUNZEL CUSTOM-MADE CORDS

and C. W. Haas, Big Timber, Mont. were elected to the board to fill vacancies caused by the deaths of A. O. Black and John H. Wright. Donald Powers, president of General Telephone Corp., New York City was elected to the board to succeed Harold Bozell, New York City, and Fred Norris, Muskegon, Mich. was elected to succeed Harry Engh, Erie, Pa.

The directors elected L. W. Hill, president of the Carolina Telephone & Telegraph Co., Tarboro, N. C. to succeed Ray Dalton, vice president and general manager of the West Coast Telephone Co., Everett, Wash., as USITA President. Other officers were re-elected as follows: First Vice President, R. B. Still, Bloomington, Ill.; Second Vice President, Edwin M. Blakeslee, Santa Monica, Calif.; Executive Vice President, Clyde S. Bailey, Washington, D. C.; Treasurer, Carl D. Brorein, Tampa, Fla., and Secretary and Assistant Treasurer, George C. Richert, Washington, D. C.

The new USITA president recently returned to his post as president of the Carolina Tele. & Tele. Co., following a 6-month tour of duty as Director of the Communications Equipment Division of the National Production Authority.

In a telephone industry career of 35 years, one of the previous high points of Mr. Hill's service had been his work—particularly important to his recent NPA capacity—as General Coordinator of National Defense Activities in the eight-state area of the Southern Bell Telephone & Telegraph Co.

The South, of course, is and has been in the past one of the key national defense areas. In addition to its tremendous growth in war production facilities during World War II, there were a multitude of armed services' bases, Tennessee Valley Authority operations, and key agricultural production centers. Mr. Hill, who had been serving as Inventory and Costs Engineer of Southern Belll, was first named to coordinate defense activities in 1939, when the European war started, as an additional duty. As the defense program began to gain momentum, he was named to the defense coordination post as a full-time assignment, and continued in it until 1943, when he joined Carolina Tel. & Tel. as Vice President.

Mr. Hill became President of Carolina Tel. &Tel., as well as its subsidiary, the Home Telephone & Telegraph Co. of Virginia, in 1945, succeeding the veteran J. R. Porter. Both companies have had impressive records of growth and service in the postwar years, under Mr. Hill's administration.

Mr. Hill has been active in the U.S. Independent Telephone Association, serving as a Director since 1945, and on the Executive Committee for a three-year period.

Non-industry speakers appearing at the USITA Convention placed an emphasis on restoring public confidence in the free enterprise system as the cornerstone in the national economy of the United States.

The Honorable Paul H. Douglas, United States Senator from Illinois, appearing at the final session of the convention on Oct. 17, presented two questions to his audience: "Is the war in Korea futile? . . . What would have happened if we hadn't?" He then pointed out that Korea touches Japan and that the objective of communism was to encircle and carry Japan into the communist camp. "Then," he said, "Indo-China would have joined China and overpowered the French. . . and Malaya would have gone with its rubber and tin . . . Western Europe would have sensed the wave of the future in communist directions resulting in a weakened position of a free world."

Senator Douglas emphasized that the chances of peace are good if we "get through 1952-1953," but he warned that the next 21 months would be "tough."

D. E. Casey, vice president of the American Taxpayers' Association, Washington, D.C., addressed the afternoon session of the USITA Convention on Oct. 16 and warned his listeners that "we have a rubber stamp sort of government today," and that "socialist governments of the world are feeding off the bounty of this country."

Emphasizing that an "unbalanced budget leads to socialism" Mr. Casey stated that the only cure for the present situation was for every citizen to exercise his voting franchise. Quoting many figures to prove his point, he stated that already the rich man has been liquidated and the small man "is now to suffer from taxes."

Pointing out that this year's government expenditures will exceed income from over 4/5 of the sections comprising the United States, stated that "over 25 per cent of the national income going for taxes is passing the danger line."

Convention Photos

Photos on the opposite page were taken by the* TE&M *Camera during the* USITA *Convention. The November 1 issue of* FORTNIGHTLY TELEPHONE ENGINEER *will feature many additional convention photos.

"It's Time We Saved Ourselves"

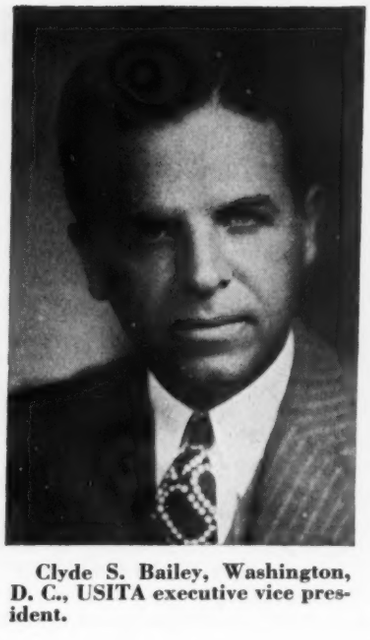
HONORABLE Johnston Murray, governor of Oklahoma, who recently wrote a comprehensive veto message on a telephone co-op bill passed by his state's legislature, which failed to recognize the powers of the state regulatory commission, delivered the final address of the Oct. 16 morning session. Speaking on the topic "It's Time We Saved Ourselves," Governor Murray stressed the ever-growing tendency of the individual citizen to criticize, condemn and berate the government despite the fact that the gradual and willing surrender that has been made by the people and the states to the central government is more responsible for the government's economic ills than any other single contributing factor.

Discussing his recent veto of the Oklahoma Rural Telephone Act, Governor Murray stated he vetoed the bill because "it seemed to be an effort to strengthen the theory of strong centralization and special privileges instead of an advocation of the sovereign rights of the state. . . . I might have been wrong, but to me it seemed to be an act that had for its purpose broadening the gate through which the federal government might invade a private utility. . . .

"I want to point out that this act appeared not only to give the federal government the right to invade this field, but to give to the entities, authorized to be created under the terms of the act, special privileges not enjoyed by other citizens engaged in like business. . . . I shall not look with favor upon an act affecting the telephone industry or any other industry that attempts to set one part of the industry aside with special privileges and exemptions. . . ."

Governor Murray emphasized that in substance he had no quarrels with cooperative associations or corporations. "In fact," he said, "I am inclined to look with favor upon their existence where such existence is justified by conditions but I further said (*in his message vetoing the Rural Telephone Act*) that I could find no reason why a cooperative corporation should enjoy special privileges and immunities simply because it bore the name 'cooperative.'"

Expressing his deep concern at the tendency of business interests to sit by and refuse to fight the passage of legislation which is detrimental to the citizenship as a whole, Governor



Clyde S. Bailey, Washington, D. C., USITA executive vice president.

Carl D. Brorein, Tampa, Fla., USITA treasurer.

George C. Richert, Washington, D. C., USITA secretary.

Murray warned that "nations perish only because of the lethargy and decadence of citizenship. . . ."

"Where men remain strong, virile and determined," he said, "the life of a nation will be ageless and ever young. What now shall we do to save ourselves? . . . The basic ingredient of our prescription is contained in one-word—*action* . . . Action—not deferred or delayed—is necessary if we would save ourselves from further engulfment . . . It will take many forms and different kinds of action to attain the ultimate goal, but these things are possible and the goal is surely worth the effort. The first and most important type of action I have to suggest is that the individual citizen busy himself immediately in a study of his government and of its past history. By the acts and comparisons of the past we may be able to judge for the future. Every responsible, well-meaning citizen can, by reflecting only a few decades back, remember the sovereign independence of individual thought and individual action and compare it with the present day condition where men are restricted by laws and regulations; where business operations are becoming an almost unbearable burden, and where governmental processes and impositions are of such magnitude that human initiative to explore, invent, advance and prosper is suffering from a disease that we might call 'mental pellagra. . . .'"

In closing his thought-provoking address, Governor Murray reemphasized that unless "a man is willing to fight for what he believes is right in the administration of his government . . . he should not be heard to complain about the manner in which it is operated. . . ."

Pioneers

THE ANNUAL meeting of the Independent Telephone Pioneer Association in the Grand Ballroom of the Hotel Stevens Oct. 16 drew an overflow crowd that enjoyed a program described as one of the best ever presented by the Pioneer organization.

With President R. A. Lumpkin, Mattoon, Ill., presiding, the Pioneers held a short business session prior to presentation of the program arranged by Chairman Roy Siemund, Chicago, and committee members R. H. Burfeind, John Brown Cook, Herbert F. Lello, F. M. Parsons, W. J. Pfaender, all of Chicago; William P. Hollis, Clifton, N. J., and H. C. Ryon, Galion, Ohio.

Directors elected are: Frank E. Bohn, Fort Wayne, Ind.; Harold V. Bozell, New York, N. Y., and Frank S. Barnes, Rock Hill, S. C. They succeed Carl D. Brorein, Tampa, Fla.; V. E. Chaney, Chicago, and Mrs. Mayme Workman, Springfield.

Merle M. Hale, Lincoln, Neb., was elected president. Other officers elected are: Vice Presidents—Frank S. Barnes, Rock Hill, S. C., and F. M. Parsons, Chicago; Executive Secretary and Treasurer, Mayme Workman, and Secretary, J. K. Johnston.

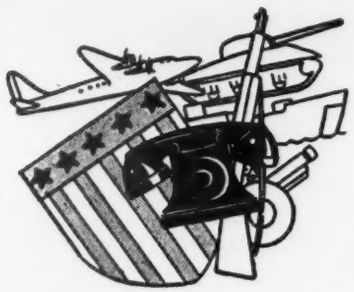
Hal S. Dumas, president of the Telephone Pioneers of America and executive vice president of the American Telephone & Telegraph Co., New York City, brought the Independent group a warm greeting from the Telephone Pioneers of America and praised the two segments of the communications industry—Bell and Independent—and the 70,000 industry members who belong to Pioneer organizations.

He warned his audience that safety of this country depends upon production and communications and that "our job is to see that this business is kept at high peak," and emphasized that regulators must understand the importance of communications as "one of the nerve forces that helps make this country impregnable . . ."

Fulton L. Lewis, Jr., radio commentator and syndicated columnist, Washington, D.C. told the Pioneers that during his recent trip to Europe he found the Europeans happy, employed and the standard of living high, giving evidence of the private enterprise prosperity. "In England," he said, "the exact opposite was true for in England there was hunger, unemployment, lack of morale and initiative."

Warning that "Britain is a nation of 'gone people' under socialism, Mr. Lewis stated that socialism is a creeping paralysis in America" and that "the nation is further down the road of disaster than most people realize." He commented that "lies and falsifications built the socialistic system" and that in England the system has resulted in 150 per cent luxury taxes, government railroads operated by twice the necessary number of employees, and socialized medicine with each doctor taking care of 2,500 patients at a cost to each patient of only $2.50 per week.

Describing Washington government as an "abyssmal mess," Mr. Lewis stated that a crusade was needed and that political realignment is necessary if the nation is to be saved from socialism.



"Our Industry In A Changing World"

". . . We remain privately owned . . . a bulwark of old fashioned Americanism against the ravages of what would destroy us."

THE FIRST GENERAL SESSION of the USITA Convention on Tuesday morning, Oct. 16 featured the address of the retiring president of the National Association, Ray Dalton, vice president and general manager of the West Coast Telephone Co., Everett, Wash. Discussing the important subject "Our Industry In a Changing World," the popular and personable USITA president brought the conventioners an outstanding message that drove deep into the roots of the industry's problems, presented workable cures for many of the ills now besetting the industry, and pointed up the fact that the future of the telephone industry is bright in regard to everything about it to which its members can apply the same sort of free initiative and democratic development that made the Independent movement.

Warning that the advocates of government ownership would like nothing better than consolidation of the industry into a very few large companies, Mr. Dalton emphasized that it "is a comparatively simple matter for government to take over a big, highly centralized concern, but for government to take over 5,000 small companies with a diversity of organization and interests scattered all over the country, would be almost a physical impossibility."

"We can thank our organization into thousands of small companies," he said, "for the fact that we remain privately-owned and a bulwark of old-fashioned Americanism against the ravages of what would destroy us."

Pointing to the fact that the industry has lost about 1,000 of its little companies during the past seven years, mostly by sale or consolidation, Mr. Dalton reminded that some of those losses of small company individuality were essential. "Their uneconomical locations," he said, "made their concentration into larger units inevitable."

"Some of those losses," he added, "also were not a scientific development in the best interest of everyone concerned, including the public, but were the result of desperate measures in desperate situations. That is not the right approach, of course. In the formation of Regional Committees, we have the best attempt yet evolved to solve the small company problem in a sane, scientific manner. If a small company can be maintained as a healthy profitable enterprise, it will be given the best help available to maintain its identity. If the economics of the situation demand its sale or its amalgamation into a larger unit, that may be achieved by a group of men thoroughly conversant with the facts and thoroughly sympathetic and determined to ensure that the small company is not victimized unfairly."

He explained that the success of the plan must depend upon the men who comprise those committees. "We are fortunate," he said, "to have enlisted the services of exceptionally capable Independent telephone executives in every regional area. These men are giving us their time and their professional brains for the good of our industry; they receive no compensation but their bare travelling expenses. It augurs well for the future that these men of top management caliber are willing to act for our common good on so altruistic a basis. We may justifiably entertain the highest hope for their success in dealing with the toughest of all our problems—the fate and the future of the small Independent company . . ."

Retiring USITA President Ray Dalton, vice president and general manager of the West Coast Telephone Co., Everett, Wash.

Discussing other conditions within the telephone industry, Mr. Dalton stated that every day "sees some new complication in our business."

"One must look back just a few years," he said, "to realize how far we have advanced in how short a period—and the pace is accelerating. There is the tremendous challenge of universol toll dialing and universal automatic toll billing. Only yesterday, it was a dream. Today it is here and acknowledged a tangible item in our planning. Its full adoption in every hamlet in the United States may be closer than we think. I believe we should do all that we can to hasten the day of complete mechanization . . ."

Mr. Dalton commented that the miracle of microwave will "change our industry faster perhaps than most of us realize."

"No doubt," he said, "we shall continue to build new pole lines for some years yet, but they are already becoming obsolescent. The familiar cross-arm and bracket leads will take their place with sailing ships and horsedrawn wagons. Our linemen will yield to electronic technicians who will know less about safety belts than we know about tinderboxes.

"Not only are our own specific functions becoming more complex but we are saddled to an ever-growing extent with collateral communications developments. I refer to telegraphy, telephotography, radio, 'ship-to-shore,' 'wired music,' television and so forth. We cannot evade

the obligation to furnish facilities for these services."

Explaining the extraordinary shift of population both in the country as a whole and within areas contiguous to the larger cities, Mr. Dalton stated that nationally the population movement is in course of changing toll line maps. "In 1790," he said, "the population center of the United States was 23 miles east of Baltimore. Today it is somewhere just a few miles south of this room (Grand Ballroom, Hotel Stevens, Chicago) and it is moving west at a fast rate.

"Of concern to us is the trend toward dispersal away from the cities. A combination of high taxes, high prices of real estate and the fear of atomic invasion is compelling a vast centrifugal movement. In my opinion, we are at the very beginning of an era of social and business dispersal which will radically change our ideas of urban and rural living. The big cities will not grow much bigger and some of them will shrink in population. Counties that now consist of a few big cities and vast rural areas will undergo metamorphosis into something like one great widely diffused community with innumerable small local centers. That is happening now and very rapidly. The pace of that change will accelerate, even in peacetime. One bomb on a major American city could hasten the process."

Mr. Dalton emphasized that all of this adds up to a crescendo of technical complication and change. "That," he said, "is not in any way a fearful thing to our larger Independent companies or to the Bell System. To about 5,000 of our smaller Independents however, and consequently to the Independent industry as a whole, it is a grave threat for the reason that most of them are not able without outside assistance to handle wholesale changes from past simple rural telephone requirements to the complex developments that I have suggested."

Stressing the fact that the new Regional Committees will be able to help the "little fellow" meet such situations, Mr. Dalton warned that "this matter of dispersal may assume such dimensions that it will be a major challenge to every telephone company."

"The changes," he said, "will present difficult problems to us, but I am not viewing with alarm or anything of that sort. These are problems to which we can find the answer within our own ranks. The brains and resources and energy that have built our Independent telephone industry and the Bell System can take care of our future development, be what it may."

Honorable Johnston Murray, Governor of the State of Oklahoma, addressed the USITA Convention October 16.

Final USITA Convention speaker was Douglas R. Springfellow of Radio Station KLO, Ogden, Utah.

Referring to the growth of government interference or actual participation in business, Mr. Dalton stated that if another major world war occurs, we may expect governmental domination to "the last degree, either by ownership or controls so rigid that the last vestige of independence in management will have been lost."

"But what of the alternaive to overall war?" he asked. "What if we merely stagger along through another five years of peace under arms and sporadic limited wars of the Korea type?

"In war or peace, as long as we have an administration imbued with the ideals that have prevailed since March 1933, the government will take over more and more of the prerogatives of private industry. Let us hope that in 1952 we shall have reversed that condition . . ."

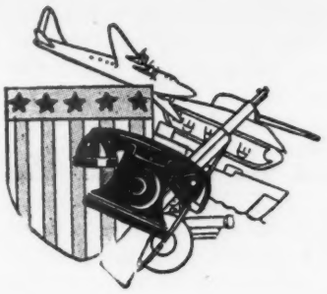
Discussing the problem faced by a regulated telephone company attempting to keep pace with inflationary trends, Mr. Dalton stated that increased labor and material costs must be reflected in higher telephone rates. "Fortunately," he said, "the majority of the regulatory commissions have been sympathetic to the rate problems of telephone companies. A serious problem to telephone companies, however, is that there is almost always a lag, sometimes long in duration between the time when wage rates are increased and offsetting increases in telephone rates may be secured."

"Also," Mr. Dalton stated, "during the past few years there has developed what may be termed a 6% rate making philosophy. We have almost come to accept this unfair thesis ourselves that we dare not make more than 6% in the best of times, which can result in disaster to us in bad times such as in the early '30's.

"As you are aware, the Michigan Public Service Commission rendered an epic-making decision in late July of this year when it threw the 6% ceiling into the discard. The Commission authorized the Union Telephone Co. . . . to earn about 8% on its net plant and 12% on its common stock and surplus. . . . It is hoped and believed that the decision of the Michigan Commision may go a long way to restoring a fair and reasonable conception of earnings in our business . . ."

In concluding his address Mr. Dalton stressed that "our worst enemy is not Communism or Stalin but those associated evils—the intrusion of government into private business, excessive and unnecessary government controls and inflation. "These developments," he stated, "may wreck not only our particular phase of private ownership in business but the whole fabric of American democracy as we know it, unless we do something about it.

"We must carry the torch to our own people. We must make our employees and their dependents see the grim picture as we see it. We must educate them for their own protection to vote and work for the retention of real American democracy . . ." —THE END.



"Some Major Items On The National Scoresheet"

"Our traditional purpose has been and will continue to be, to preserve in full strength and vigor the integrity of our smaller companies."

IN HIS report on "Major Items In The National Arena," USITA Executive Vice President Clyde S. Bailey on Oct. 16 told the USITA conventioners that the 5700 Independent telephone companies, with an aggregate investment of $1.3 billion representing exchanges and other property, operate in 11,000 cities and towns. These companies probably have about 100,000 stockholders and 90,000 employees.

"With all of those investors and employees," he said, "I am not unlike the Irishman who, in his last moments, was asked by the priest if he had accepted the Lord and renounced the devil. Yes, he said, I have accepted the Lord, Father, but I am in no position to antagonize anyone . . . In talking to you today I do not expect to antagonize anyone unless it be some inconsiderate tax spenders who are being supported by the most patient, generous taxpayers in recorded history."

Reporting that "all is not quiet along the Potomac," Mr. Bailey stated that the 532 members of Congress who are "filling up the Congressional Record with speeches no one will read and a half a million bureaucrats and government hangers-on are seeing to it that quietude on the banks of the Potomac is becoming more and more a phenomenon."

"And some of the things these people are doing," he said, "are hardly calculated to deserve the plaudits of the solid citizenry of our country. For almost 20 years there has been an influential body of men in Washington who have been in favor of treating our national economy as if it were a permanent invalid, in need of a pair of crutches here, a brace there, and indiscriminate government vitamin pills paid for by the sweat of the brow of the taxpayers and concocted out of the questionable political and economic nostrums of those who have been of the view that our nation grew into the richest, strongest in the world by doing everything wrong.

"There is no unimportant government official. Many of these people have turned their backs on the American system. They are the apostles of the something-for-nothing philosophy, a way of life politically successful but economically suicidal."

Emphasizing the degree of cooperation which the telephone industry is extending the government, Mr. Bailey stated telephone companies know that "we are today living in a state of emergency."

"They know," he said, "that the needs of the armed services and other government agencies related to the defense effort must come first. The managements of telephone companies yield first place to no one in a desire to cooperate in the most wholehearted way with their government. This duty is paramount. It is being acquitted with distinction and credit. The people who are manning the communication ramparts have seen their shadow grow larger.

"I am sure the Communications Equipment Division of the National Production Authority will attest to the verity of this assertion.

"Speaking of that Division, I would like to pay a deserved tribute to Mr. L. W. Hill, president of the Carolina Telephone & Telegraph Company, who headed that agency for six months until the leave of absence granted by his Board of Directors expired on October 1. Mr. Hill made that division one of the best run among the many divisions in the N-P-A. He was a competent executive of the government. He surrounded himself with an efficient staff. When he returned home he had a right to feel a sense of satisfaction with his six-months' tour of duty.

"His successor as head of the N-P-A Communications Equipment Division is Mr. Robert E. Williams of Chicago, who took over the reins on October 1. From him we also have every reason to expect a tenure characterized by patriotism, ability and a working recognition of the practicalities of the telephone business. . . ."

Discussing the smaller companies in the Independent industry, Mr. Bailey emphasized that "one of the historic purposes to which the National Association has dedicated itself is that of doing everything it can within reason to protect our smaller units." "Its traditional purpose has been, is now, and will continue to be," he said, "to preserve in full strength and vigor the integrity of our smaller companies.

"Without turning too many pages of history, it is only necessary to mention the 500-station exchange exemption in the Wage-Hour Act, later increased to 750; to the Section 2(b) (2) exemption amendment in the F-C-C Act which protects the smaller companies from the rigors of control by that federal regulatory agency; and to the exemption from the rate increase notice of the Defense Production Act. Other enduring monuments to successful efforts exerted to foster and protect the small exchanges have been erected along tortuous legislative and other highways.

"But in a dynamic era when economic forces are producing rapidly changing conditions still further steps must be taken if the small exchange owner is to keep his head above water.

"Recognizing this, our Board of Directors at a meeting during our Executives Conference in May authorized the formation of committees of Independent telephone executives wherever needed, to function under and in close cooperation with our Committee on Problems of Small Companies and our Bell Acquisitions Committee. The Board imposed four broad duties upon these regional committees:

"(1) Making a survey of Independent companies which might become distress cases because of inability to obtain needed capital or of a desire of the owners to sell and withdraw from the telephone business.

"(2) Extending to Independent companies in these cases operating, financial and other advice.

"(3) Implementing the policies of the USITA in regard to sales to, purchases from, and trades of property with Bell System companies.

"(4) Exploring the matter of duplication of existing Independent telephone facilities by R-E-A borrowers."

Mr. Bailey stated 12 regional USITA Small Company Committees have been formed and are functioning. More than 70 persons have so far been appointed to these committees. USITA Board of Directors has made an appropriation to defray their expenses when traveling on committee business. Operating officials of Bell System companies are cooperating in a fine manner, he said.

"The small company problem," he stated, "has been with us for a number of years. This is the first time in the history of the industry, however, that a comprehensive program has been initiated for making a company-by-company survey in order to find out which are now in, or are likely to be confronted with, necessitous circumstances, and for making available to these companies the advice and help of men qualified to render operating, managerial, engineering, financial and other advice.

"I would like to express appreciation to the regional committee members for their willingness to devote their time and energy to a program designed to keep as healthy, lusty units the small Independent exchanges—exchanges which have been referred to as the backbone of our industry."

Reporting that USITA activity relates to certain definite steps which are being taken to obtain an increase in toll compensation on business interchanged with Associated Bell Companies, Mr. Bailey said, "Bell System representatives are in general accord with us that wages, construction costs and taxes have risen and it is also recognized that there has been no upward revision in compensation for a number of years, long before the inflationary forces now upon us began to be felt."

He emphasized that the USITA is proceeding in an orderly, business-like way to obtain the additional compensation many companies have been urging in order to cushion the impact of the higher operating costs which have been experienced all along the line since the last upping in toll compensation took place.

Referring to the FCC interstate toll rate reduction proceeding instituted by a show cause order on January 19, 1951, Mr. Bailey stated that USITA has intervened in the proceeding in order to put itself in a formal position to represent the interests of Independent telephone companies when hearings are held.

"It is understood," he said, "that at one of the NARUC—FCC conferences representatives of the FCC informally proposed an amendment to the Federal Communications Act in such form as to provide for a pooling or division of revenues plan. Presumably such a plan would contemplate a leveling-off of the humps and filling in of depressions, a shifting of revenues where earnings are high to areas where earnings are low, for the purpose of reducing rates at one place or avoiding increases at another. The pooling plan would call for uniform rates and charges and rate structures applicable to toll telephone services subject to the jurisdiction of the federal commission and of the respective state commissions.

"All of this would seem to involve a scheme in which rate-payers in certain parts of the country would subsidize those in other parts.

"It is recognized in regulatory quarters, both state and federal, that such an arrangement would pose very

(*Please turn to page* 50)

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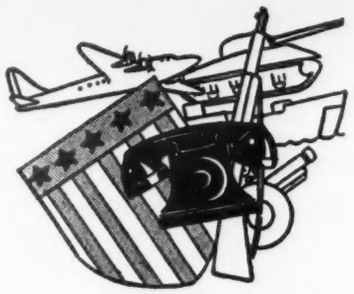

"My Tour of Duty With The National Production Authority"

"We must accept these restrictions if we are to continue to build and insure our country's security."

AT THE FINAL general session of the USITA Convention, Wednesday morning, Oct. 17, L. W. Hill, formerly director of the Communications Equipment Division of the National Production Authority (NPA) and president of the Carolina Tel. & Tel. Co., Tarboro, N. C., discussed his "Six Months Tour of Duty With The NPA."

Reviewing the progress made since creation of the NPA on Sept. 11, 1950, Mr. Hill explained that instead of a short period of war there is what may be an indefinite period of preparation. "If," he said, "the attempt should be made to meet the military production needs of today and those of the future only by diverting the necessary proportion of the industrial capacity to defense with no expansion of productive capacity, it would not only reduce the standard of living for as long as it was necessary to have a large defense force, but before long it would seriously weaken the entire economy."

Mr. Hill stated that the goal has been set for producing as quickly as possible both the armament that is needed and the added industrial capacity to turn out eventually all the other goods and services that may be now in short supply. "To do this," he said, "industry has undertaken to build freight cars to make equipment for bringing in more oil wells, to expand the facilities for refining oil, to build more power generating plants —in general to increase the industrial capacity in every way necessary."

Citing figures which indicate the magnitude of the expansion that is needed in basic industries to do this, Mr. Hill stated:—(1) Steel must be increased from annual production of nearly 100 million tons to a volume of something over 118 million tons; and, (2) primary aluminum produced must be increased from 750,000 tons annually to about 1,400,000 tons—an increase of almost 90 per cent.

"The first objective," he said, "is to keep the military production on schedule. The vast majority of military items are presently on schedule. Some few programs are behind schedule to a greater or lesser extent. This should not be discouraging for occasional failures to meet schedules seem to be inescapable in a program of this magnitude. Very few of the delays have been caused by any failure of materials of supply, and most of them are chargeable to difficulties inherent in the tooling-up process. Vigorous steps have been taken to put these programs back on schedule."

Mr. Hill stated that the second objective is the maintenance of a healthy economy by allowing the largest volume of civilian production consistent with meeting the military needs first. The third objective, expansion of the basic industrial capacity is well on its way to its objective. Mr. Hill reported.

Commenting that the expansion program is scheduled for completion by mid year of 1953, Mr. Hill stated that between now and mid-year 1953 the requirements will be greater than the supply. "The shortages," he said, "will gradually disappear as the expansion program progresses. For some time, however, there will be shortages of many materials and facilities to make these materials into what is needed. For some time, then, it will be necessary to continue to divert materials and facilities from civilian production to defense production."

Describing the fourth and final objective as the "fairest possible distribution" of available materials for civilian production after military needs are met, Mr. Hill emphasized that "what can and what must be done is to be sure that all persons in the same situation be treated as much alike as possible, that there be no discrimination and that the government not be arbitrary."

"This is the kind of fairness," he said, "that is trying to be preserved with the Controlled Materials Plan. I personally think the controls can meet this test of fairness because only a relatively small number of manufacturers with hardship cases have felt it necessary to appeal to the Appeals Board of the National Production Authority after action on their cases by NPA industry divisions."

Regarding Order M-77 which was particularly prepared for the operating companies in the communications field, Mr. Hill stated that many companies mailed their applications late—too late to be given the full consideration and weight "that you would like or that the Communications Equipment Division desires. . . ."

"There are about 165 companies in the United States with more than 5,000 telephones," he said. "You large companies send your CMP applications for the next and following quarters in ahead of the deadline date or you risk being unable to get materials. That deadline date for the first quarter of 1952 was Oct. 1, 1951 and many of you were late, with some of you not even filing. . . ."

In his concluding remarks Mr. Hill reminded his audience that "as a freedom loving people we here in America have always responded quickly and decisively to outright attack, but as freedom-loving people we are also impatient. It is contrary to your nature to accept the restrictions of conrols and the annoyances of temporary shortages of some materials and goods—but we must accept these restrictions and annoyances if we are to continue to resolutely build an armed strength so great as to insure the security of our country. . . ."THE END.

DEMOCRACY is the only form of government that sets no bounds to the possibilities of man. Its doors all open toward the future . . . And it will not get the reverence it deserves the world over until America makes manifest that democracy is not earth-bound but a Divine quest for humanity's spiritual perfection. Democracy is, first and foremost, the perpetual revelation of greater capacities in the human mind and soul.—*Agnes E. Meyer*

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Joseph (Joe) Fagan, Pres.
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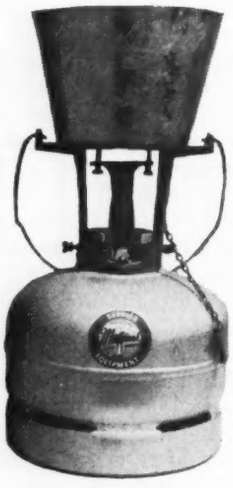

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Furnace manufactured to specially designed Mutual No. 6, No. 11, or No. 21 Propane Cylinder with bottom skirts to prevent tipping; built to ICC 4B 240 Code; 250 lb. w.p.; fitted with filler valves, 375 lb. relief valve, and liquid level gauge. Develops approximately 2350°F.

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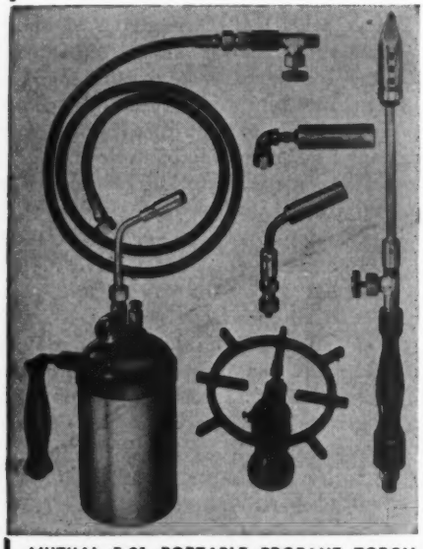

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The Mutual B-91 Propane Torch is popular among linemen for fast emergency repairs. Easily hung from belt, if desired. Using Propane, this torch is ready for instant use. No pumping or priming, no waiting or sooting. Flame won't blow out. Easy and safe to light and control. Heats up to 2300° F. Over 4½ hrs. continuous use in each cylinder. When new cylinder is needed, handle and burner tip are quickly removed for assembly on full container. Mutual B-91 Assembly Kit consists of cylinder, handle and variety of torch tips and burners shown. Each available separately, if desired.

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Designed for preheating and melting, this rugged Propane torch will develop approximately 2400° F. Cast iron burner tube, special cool grip, and instant control of flame with wheel-type needle valve handle.

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For sweating large copper pipe fittings, wiping joints, heating copper or brass pipe and fittings. Also for melting compounds from electrical construction equipment such as pot heads, junction boxes, etc.

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Merle Hale,
Lincoln, Neb.,
Chairman, USITA
Commercial Committee.

USITA Commercial Conference Tackles Today's Problems

Discussions at USITA Commercial Conference cover —(1) Inter-Company Settlements, (2) Commercial Surveys, and (3) Foreign Exchange Service.

MERLE M. HALE, USITA Commercial Committee chairman, and general commercial manager of the Lincoln (Neb.) Telephone & Telegraph Co., presided at the Commercial Conference which was held Oct. 15 during the USITA Convention. Meeting in the Upper Tower room of the Hotel Stevens, commercial representatives of Independent telephone companies heard speakers Fred E. Norris, president of the Michigan Associated Telephone Co., Muskegon, Mich.; Roger Lyons and Arthur Boyd of the Kentucky Telephone Corp., Lexington, Ky., and Mr. Hale.

Following greetings from the USITA by Ray Dalton, USITA president, Mr. Hale started the conference with his Commercial Committee Report. Speaking as chairman of the committee, Mr. Hale reviewed the work of the committee, emphasizing that committee members B. H. Cravens, Jamestown, N. Y.; A. J. Harty, Kansas City, Kan.; H. J. Huether, Lexington, Ky.; D. A. Kafka, Tampa, Fla.; R. F. Lucier, Warsaw, Ind.; F. E. Norris, Muskegon, Mich.; R. J. Riordan, La Crosse, Wis., and Ralph Van Trine, Durham, N. C., have consistently given their abilities to assist in the development of workable plans to improve existing commercial practices.

Mr. Hale reported that one of the important assignments given to the Commercial Committee was the matter of payment of toll commission to switching line subscribers. This subject was handled in cooperation with the Plant Committee and the Committee on Problems of Small Companies. He stated the committee had reported to the USITA board of directors, "that it costs more to handle their toll messages than the total message revenue received . . . but more important that the payment of a commission to switching subscribers is wrong in principle as it would be in effect a rebate."

Mr. Hale stated that during the year the committee had received an inquiry regarding the feasibility of postal card billing and had queried members through the Association's Member Letters. "We asked," he said, "that those companies using this type of billing furnish us with samples and information. Three companies complied with this request and the forms and information were forwarded to the inquiring member. In case you are interested in the opinion of our committee regarding this type of billing, we do not feel it advisable. In some instances postmasters interpret the regulations so as to deny billing on postal cards; it (the card) does not permit sufficient itemization, and such billing might in some cases be objectionable to the subscribers."

Mr. Hale commented that another matter to which the Commercial Committee gave some consideration is the Wisconsin plan of handling rural foreign exchange service. Under this plan an applicant located in territory beyond but not more than two miles from the boundary of the exchange to which he wishes service, may have service to that exchange by paying the regular rate plus foreign exchange mileage based on the air line distance of the subscriber's location beyond the boundary. The monthly mileage rate applicable in Wisconsin is 75 cents for the first 2/10 mile or fraction and 30 cents for each additional 1/10 mile or fraction.

"At first," he said, "it might seem that this is at least a partial answer to our extended service problem and would be helpful to those borderline subscribers whose trading center and zone of interest is not the exchange on which he is located. However, further analysis would indicate that this plan will lead to considerable duplication of plant, create a demand for dual exchange service, and, if practiced to any great extent, will lead to chaos and confusion."

The second Commercial Conference speaker, Mr. Norris, presented the report of the Sub-Committee on Extended Area Service.

Inter-Company Settlements

MR. NORRIS explained that for the purpose of developing and recommending to Association members, for general application, a formula for intercompany settlement by which two companies joining in rendering a common service may settle between them the costs incidental to rendering that service, a commercial sub-commitee has been appointed.

"One approach to the intercompany settlement question," he said, "is this: Each company assumes the responsibility for extended service calls originated in its exchange and which are terminated in the exchange of the other company. The investment, expenses and so forth, in each exchange is prorated to extended service in the proportion that extended service traffic bears to total terminating traffic, and settlement is made on the basis of the difference in such prorated costs."

Noting that this approach would require some sort of a separation study, Mr. Norris stated there is a question, however, that such studies are justified. "From the information about extended service traffic which has reached me," he said, "it is concluded that after a 'shake-down' period, the volume of extended service traffic between two exchanges is approximately equal—and this is regardless of the relative size of the two participating exchanges.

"To the extent the traffic volume

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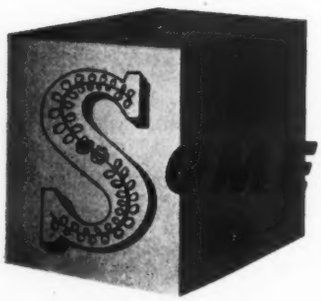

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It's a sorry situation when a telephone company invests its hard earned money in a dial switchboard and finds that it is necessary to discard that switchboard because the exchange has grown beyond its capacity.

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In this way, the original investment in a Leich Dial System is always good. The telephone company never needs to worry about outgrowing the original equipment.

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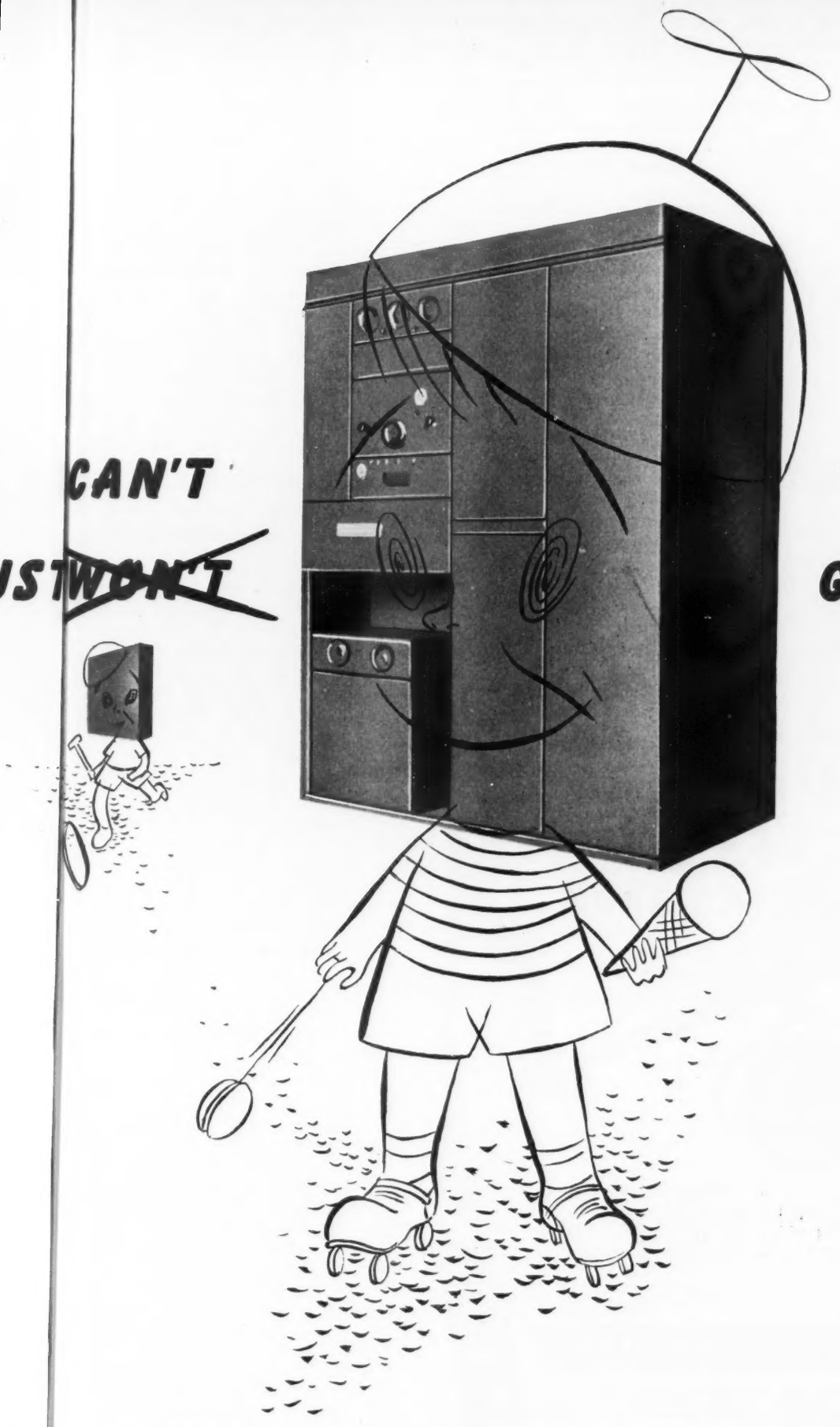

LEICH MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

in both directions is approximately equal, it may be reasonable that a 'streamlined' approach supplant the more complex separation study approach. The 'streamlined' approach would contemplate that since the extended traffic volume would be approximately the same, the investment in switchboard, buildings and so forth, incidental to that traffic would be approximately the same in both exchanges and would, therefore, be offsetting. As to the cable and wire facilities required to connect the two exchanges for extended service, the charges, therefore, would be shared on a 50-50 basis, under this approach."

Mr. Norris stated that a second approach which might be followed would consider the foregoing factors and introduce the additional factors—benefits and value of service into the intercompany settlement formula.

Commercial Surveys

DESCRIBING a Commercial Survey as an "instrument designed to provide information to all departments in our companies which will help to determine exchange area boundaries, base rate area boundaries, central office equipment capacities, multi-office centers and outside plant distribution requirements," A. F. Boyd, commercial engineer of the Kentucky Telephone Corp., Lexington, urged those attending the commercial conference to investigate the possibilities that such surveys contain.

"A survey," he said, "is necessary in order to properly engineer both central office and outside plant projects. Without the information so provided we find ourselves in the precarious position of having either too few facilities with the consequent loss of revenue, or too much idle equipment and plant, and the corresponding lack of return on invested capital."

Mr. Boyd emphasized that a commercial survey should be just as much of any engineering project as the writing of a work order or any other phase of plant engineering and its cost should be charged directly into the project wherever possible.

"A survey," he said, "can be one of the most potent factors in developing good public relations. Without it we either have to overbuild or are faced with a constant condition of 'no facilities' and the attendant ill will created by a large log of held orders. Being a regulated monoply it is incumbent upon our companies to provide adequate facilities to serve the public insofar as it is humanly possible to do so. Without benefit of a survey we are not able to determine the amount of facilities necessary to meet this moral requisite . . ."

Following presentation of a motion picture entitled "A Half Billion Hello's," by D. A. Kafka of the Peninsular Telephone Co., Tampa, Fla., the commercial conference was concluded with a "Question and Answer Period" presided over by Moderator A. J. Harty, Kansas City, Kans.—THE END.

Major Items

(*Concluded from page 44*)

serious jurisdictional questions. The state commissions have historically been jealous of their powers and quite articulate in their criticism of attempts of federal regulatory agencies to poach on state preserves. It may be assumed that the state commissions will exercise the greatest caution in dealing with any division of revenue plan which carries the seeds of destruction of their jurisdictional prerogatives.

"It is interesting to recall that in the Transportation Act of 1920, Congress provided for a pooling plan for the railroads of the nation. Some of the railroads at the end of World War I were prosperous but others were in necessitous condition. The railroad pooling plan, embodied in Section 15a of the Act mentioned, proved unworkable administratively and at variance with the laws of economics.

"After the lapse of several years and large expenditure of public money by the Interstate Commerce Commission in an effort to give effect to the law, the plan was repealed by Congress. At Congressional hearings on repealing bills statements repudiating the plan as unworkable were made not only by shippers, the railroads and the state commissions but even by the Interstate Commerce Commission itself. Repeal was a grim monument to the idealistic dreams of its unrealistic authors.

"In the railroad experience there will thus scarcely be found evidence to encourage a belief that a telephone pooling plan would meet any greater public favor."—THE END.

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George Rose, Tampa, Fla., Chairman, USITA Traffic Committee.

New Methods Reviewed At USITA Traffic Conference

USITA Traffic Conference features discussions of— (1) Peg Counts and Force Adjustments, (2) Tributary Practices, and (3) Nationwide Toll Dialing.

GEORGE W. ROSE, Tampa, Fla., chairman of the USITA Traffic Committee presided at the Traffic Conference on Monday, Oct. 15. The meeting, held in the South Ballroom of the Hotel Stevens, Chicago, during the recent USITA Convention featured addresses by Mr. Rose, John E. Robbins, San Angelo (Texas) Telephone Co.; W. B. Crays, Ohio Consolidated Telephone Co., Portsmouth; Howard F. Van Zandt of the Kellogg Switchboard & Supply Co., Chicago; and E. W. Baker of the Bell Telephone Co. of Pennsylvania, Pittsburgh.

In his report on Traffic Committee activities, Mr. Rose stated that many Independent telephone companies are finding conditions as they were during 1942-1945 as the result of military or defense operations in their areas. "Posted delays," he said, "running into hours are frequently encountered at a number of points. We have learned that many long lines circuit additions previously planned for non-defense areas may not be forthcoming—they probably will be diverted to more important areas which is as it should be."

Other items reported by Mr. Rose included the following:

(1) As a result of recent tests proving that noise, not overwork, is the major cause of fatigue among telephone operators it has been recommended that management consider soundproofing operating rooms.

(2) Many telephone companies have reported improved customer relations as the result of showing various movies to the public; such movies as "Speeding Your Speech," "Your Tell-Tale Voice," and "Telephone Courtesy," can be secured through your Bell representative.

(3) Several companies have reported that after one year they are reaping benefits from special aptitude tests developed by the United States Employment Service.

(4) The "Trafficorder" was recommended as a simple method of taking switch counts and making traffic studies—the Type B unit scans 50 trunks every 30 seconds, while the Type C, direct reading machine, scans 200 trunks every 10 seconds.

(5) Several companies having large exchanges have already, or are contemplating going to book-type directories with daily addendum sheets listing new, changed or discontinued listings between directories.

Peg Counts and Force Adjustments

THE PAPER prepared by Mr. Robbins and read to the traffic conference by A. W. Pyrke, Erie, Pa. pointed up the value of the "Peg Count" in enabling the telephone company to have sufficient equipment and operating force to handle all the calls liable to be placed during a given period of time. In the paper Mr. Robbins, recommended the local peg count should be taken on two normal busy days as soon after the first of the month as possible. Neither of the days should be the first day of the month, Saturday, Sunday, legal holiday or the day immediately preceding or following a legal holiday. The toll supplementary should be made for three normal busy days on days as described for the local count. After the weighted toll coefficient has been established for the office this can be applied to the average week day toll calls to determine the operators required for any given period.

Other points emphasized by Mr. Robbins' paper included:

(1) The count of local calls is made on registers by their different classifications. The register readings are entered on the proper form each hour.

(2) Toll counts are made from the toll ticket, except inward calls and certain other traffic operations which are counted by the operator on registers or tally slips.

(3) After all calls, local and toll, have been counted by their different traffic classifications by the hour, the next step is called summarizing. This means that the work units involved for each class of call (coefficients) are multiplied by the number of calls studied under each classification to determine the amount of operator work-time involved in handling the traffic for any given period.

The paper commented that if the peg count is not used to determine the number of operators required to give a satisfactory grade of service, it has been found that the prevailing tendency is to provide more operators than is necessary. Therefore, from the standpoint of good management and earnings traffic should be studied properly so that management may determine accurately the equipment and people necessary to give a satisfactory grade of service at the lowest possible cost.

Standardization Of Tributary Practices

MR. CRAYS told the Traffic Conference that the subject of operator procurement and training was discussed at some length at a meeting of the Traffic Committee of the Ohio Independent Telephone Association in Jan., 1950. "During the discussion of turnover, in operator personnel," he said, "it was developed that many toll operators leaving one company would apply for a position with another Independent company within the state and in most instances when this applicant had left a tributary office and applied for operator position in another tributary office it was

(*Please turn to page* 54)

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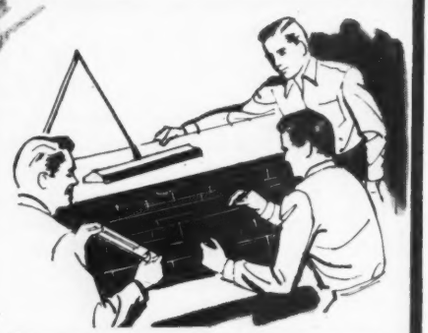

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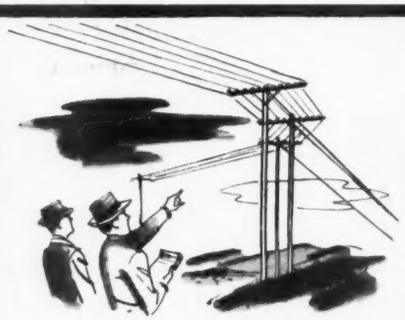

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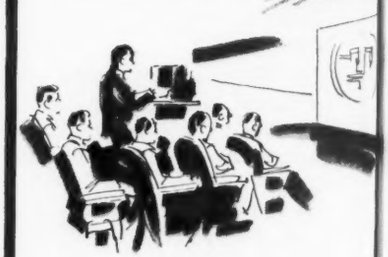

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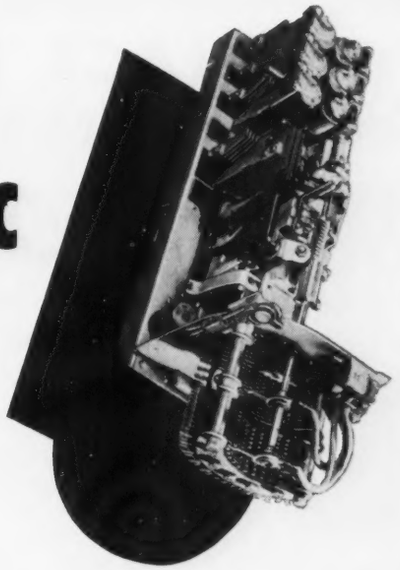

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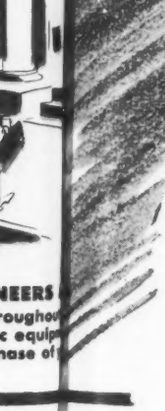

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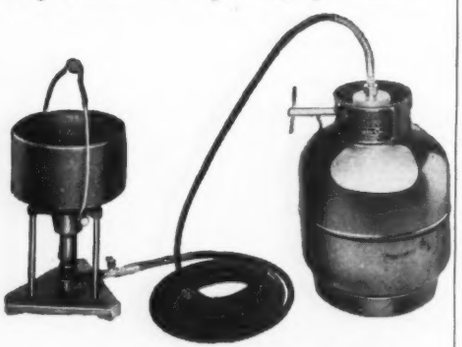

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found that the applicant required almost the same time for training as though she had no previous experience."

Mr. Crays stated that from this discussion it was decided to study the possibility of developing a tributary practice that could be applied in a general way to any office and from which chief operators or supervisory personnel in any tributary office might be able to develop lesson material for training her new personnel. This material would differ in detail from many other offices but would in a general way enable an operator to become thoroughly trained so that in case she left one exchange and sought employment in another exchange the employing office would have reasonable assurance that the applicant had the essential background of toll practice that was being used by the employing office.

"Our company, the Ohio Consolidated Telephone Co.," he said, "had in use for about 18 months prior to Jan. 1950, a tributary practice which we felt had been very useful in our training program. A copy of this practice was carefully considered by the sub-committee and recommended for use in all tributary offices desiring to make use of the practice . . ."

Mr. Crays stated that using the average figure of five operators per tributary office results in a total of 2,890 operators for the tributary offices in the state of Ohio. "Assuming," he said, "that there is a 20% turnover in personnel, we find that a total of 578 operators must be trained as replacements each year. It can now be readily understood why a standardized operating practice would be of great value throughout the industry."

Following his presentation of the contents of the practice, Mr. Crays stated that "in view of the enthusiastic reception that our practice is presently receiving in Ohio, may I suggest the Traffic Committee of the USITA give consideration to the adoption of a similar practice throughout the industry. . . ."

Traffc Management In Japan

IN AN INTERESTING, informative address that brought members of the traffic conference up-to-date on problems of the Japanese telephone system, Mr. Van Zandt stated that much of the trouble has its origin in governmental regulation and legislation.

Mr. Van Zandt stated that those who formulate the plans for the organization or organizations that will finally succeed the Ministry of Telecommunications are resolved to be freed completely from the constricting laws and regulations which have hamstrung the operations of the Ministry for six decades. "The Diet Mission," he said, "studied the problems of private ownership and regulations governing telephone utilities during their stay in the United States. There will be many other visitors from Japan in the next six months bent upon learning why the American system functions so efficiently and what Japan must do now that it is resolved to change the complexion of its own. . . ."

Nationwide Toll Dialing

THE FINAL traffic conference speaker, Mr. Baker pointed out that at present about 38 per cent of the toll board calls are dialed by operators." About half of these are short haul toll calls," he said, "between nearby points and the other half are longer calls between toll centers. There are step-by-step networks in various parts of the country and most of these are now connected together through toll crossbar switching systems."

Mr. Baker stated that the basic plan for nationwide expansion of toll dialing has been completed and is in the hands of the Bell operating companies.

He emphasized that existence of this plan with provision for all Independent companies means that whenever it fits in with development of its own terirtory, any company can join in the growing nationwide dialing network. "On the other hand," he said, "there is no compulsion; each company can decide when to do it or whether to do it at all. It does seem, however, that it is important from the standpoint of the industry as a whole to give very serious consideration to carrying out individual projects in a way that will permit extending the advantages of this type of operation."

Mr. Baker commented that it seems likely that with continuation of the orderly conversion program followed during the past few years, the transition to nationwide operator toll dialing under the proposed plan can be largely completed during the next decade. "Since," he said, "the entire plan was developed from the beginning in a way that would lend itself to the expansion of customer toll dialing, it is likely that substantial progress will also be made in this field toward the ultimate objective whereby any customer can dial his calls on a nationwide basis."—THE END.

R. D. Buzzard, Erie, Pa., Chairman, USITA Accounting Committee

Accounting Committee Studies Small Company Problems

USITA Accounting Conference features discussions of—(1) Toll Compensation, (2) Management, and (3) Automatic Toll Ticketing.

ACCOUNTING executives of Independent telephone companies on Oct. 15 participated in a conference presided over by R. D. Buzzard, USITA Accounting Committee chairman, Erie, Pa., that established a new high in interest, helpfulness and presentation of proved-in methods. Meeting during the recent USITA Convention at the Hotel Stevens, Chicago, the conference group heard addresses by Edwin M. Blakeslee, USITA vice president and president of Associated Telephone Co., Ltd., Santa Monica, Calif.; Joe E. Byrne, recording secretary of the Wisconsin State Telephone Association, Madison; and H. A. Hanson, of the Central Telephone Co., Lincoln, Nebr.

Toll Compensation

THE ACCOUNTING Committee report presented by Mr. Buzzard dealt mainly with toll compensation schedules and disclosed that Bell System representatives were in general accord that wages, construction unit costs and taxes had risen in the Independent field as well as in the Bell companies, in varying degrees, but that these factors in themselves did not constitute "prima facie evidence that the existing division of revenues between Bell and Independent companies was out of balance."

"One reason," he said, "was that on much of the business interchanged there had been upward revisions in the toll rates as the result of which a substantially larger division of revenue automatically accrues to the Independent companies. . . ."

Mr. Buzzard emphasized that it can be said "without equivocation that the Bell System companies are desirous that the division of revenues from the interchanged business be fair and proper at all times, but the scarcity of reliable data on Independent company costs of handling the interchanged business prompts the Bell System representatives to be somewhat reticent about making further adjustments in the toll compensation schedules on the basis of intangible considerations without having more support than is now available for the starting point of such adjustments."

Mr. Buzzard stated that the Accounting Committee had retained the services of Lewis T. Hayner, consulting engineer, Chicago. Mr. Hayner will develop and seek out information and data which would be acceptable to and satisfy Bell System representatives as to the justification for additional toll compensation and the amount. As a preliminary step in obtaining necessary data, the 343 Class A and B telephone companies reporting to USITA have been served with a questionnaire and requested to provide certain essential information.

"The furtherance of the Committee's work," he said, "will be dependent upon the speed with which these questionnaires are returned and the completeness of the data contained therein. Independent telephone companies which are suffering from the need of additional toll compensation should recognize herein their opportunity to cooperate with the Committee to have a hand in bringing about improved conditions in the industry. . . ."

Management Looks At Accounting

DISCUSSING "What Management Expects From The Accountant," Mr. Blakeslee listed seven items of prime importance:

(1) Reports of the facts as they occur through accurate monthly income account figures that provide a true picture of earnings.

(2) Monthly balance sheets showing the investment in "Telephone Plant in Service" and providing proof that amounts representing telephone plant under construction are being reported and transferred to "Telephone Plant In Service" in the month in which construction becomes available for service.

(3) Assurance that depreciation accruals are adequate to properly record the loss sustained in each of the accounting periods through consumption of the utility's property due to wear and tear, action of the telements, inadequacy and obsolescence, or public requirements.

(4) Reports showing the use of and balance on hand of materials and supplies by the various classes of plant so that value of materials and supplies can be held to the minimum consistent with service needs.

(5) A construction and operating budget coupled with a cash forecast for the ensuing year that will allow proper determination of the amount, the type and the proper timing of financing necessary to carry the construction budget to conclusion.

(6) Checks on adherence to the budget; this involves notification to management and the departments involved of over or under expenditures, both in the capital accounts and the expense accounts.

(7) Preparation of the estimates which comprise the proof of the need for rate relief. In his discussion of this item, Mr. Blakeslee emphasized the difference between rate case exhibits and the regular published operating statements of the company.

"Certain expenses," he said, "which are properly deductible on the books of the company may not be recognized in the rate case. The determination of the rate base may entail the inclusion of certain items not contained in the books, such as an estimate of working cash, or conversely the elimination of certain items which are of record on the books of the company. The treatment

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of the depreciation reserve or the allowance for depreciation expense in rate cases varies between states according to the laws of those respective states under which the regulatory body functions."

Using taxes as an example, Mr. Blakeslee commented it should be remembered that rates are being set for some time in the future and in computing taxes for rate case purposes the company must, therefore, include those taxes at the level of and which will be attendant to the new rates and not at the level currently shown on the books. He warned that unless this is done the company can never recover through rates the taxes which will accrue and become payable in future accounting periods.

In his closing remarks, Mr. Blakeslee reminded the conference group that accounting procedure is "not the end result but rather it is a means to that end."

"Accountants," he said, "must do things to help bring about that end rather than insisting that management do things of doubtful value or not in the interest of the public merely to smooth out accounting procedures. We expect your reports to comply with the law and with recognized accounting procedures but remember that the statements issued are your statements and the public accounting firm can either convince you of error, where error has obviously been made, certify your statement or else qualify your statement if there is bona fide difference of opinion as to whether the statement would otherwise be misleading. . . ."

Small Company Accounting Problems

ACCOUNTING problems of a small telephone company were capably discussed by Mr. Byrne who pointed out that many small telephone companies have not realized the prime importance of keeping adequate records and books. "As a result," he said, "today many of them are in dire straits. In the absence of book records they find themselves seriously handicapped, embarrassed and 'well nigh' helpless when, (a) seeking sorely needed rate increases before regulatory bodies, (b) trying to secure bank loans for purposes of plant improvements and expansion to meet public demands, (c) attempting to raise additional capital through the sale of company stock and as a final resort to 'get-out-from under' in selling the company at a price commensurate with its real worth. . ."

Describing the time and expense of keeping good records as "money well spent," Mr. Byrne emphasized that the accounting system for Class C and D companies has been successfully used for a number of years by many small systems. The system is designed to produce the desired information as economically as possible by the use of sound accounting methods and embodies the best features of the various systems formerly used by the small companies themselves. In general, the system described by Mr. Byrne is a voucher system of double entry bookkeeping comprised of: (1) subscriber's ledger; (2) a disbursement voucher register and general journal record; (3) a cash book; and, (4) a general ledger.

"Keeping the main books," he said, "is a relatively simple matter, easily taught to most clerical workers. The real difficulties lie mainly in the methods or mechanics of properly classifying and collecting the voluminous data comprising the basis for many of the accounting entries . . ."

Considering these difficulties, Mr. Byrne discussed various records and systems of collecting data for the accounting entries.

He strongly recommended that subscribers' bills be issued to all subscribers monthly and the practice of billing quarterly be discontinued.

(*Please turn to page 65*)

W. M. Driggs, Bloomington, Ill., Chairman, USITA Plant Committee.

Outstanding Conference Presented By USITA Plant Committee

1951 Plant Conference continues high goal set by 1950 meeting which represented a definite move to take a more active approach to current plant problems.

W. M. DRIGGS, Bloomington, Ill., chairman of the USITA Plant Committee presided at the plant conference Monday Oct. 15 and presented an outstanding program that was aimed and designed to benefit the majority of Independent telephone companies. The 1951 conference continued the high goal set by the 1950 meeting which represented a definite step forward in the Plant Committee's plan to take a more active approach to current plant problems and new developments.

Plant Committee exhibits in Room 521 at the Hotel Stevens included the latest in materials, ideas and tools. Of special interest was the working exhibits assembled by Plant Committee Member Dan S. Seitz and his Sub-Committee on Cable.

In his report on Plant Committee activities, Mr. Driggs stated that the objective of the committee is to "set our sights on an active approach to our year-to-year problems and new developments and to continue an association-wide program in which the wealth of personnel material in the USITA will have the opportunity to participate."

"This program covers a wide range of plant subjects, all sections of the country and all sizes of companies," he said. "We should therefore seek assistance from personnel representing each and all of these if possible . . ."

Mr. Driggs explained that probably one of the most important accomplishments of the Plant Committee was the preparation of the sample General Joint Pole Use Agreement. Data for this agreement was compiled by the sub-committee headed by Walter Trettin, chief engineer and vice-president of the Illinois Commercial Telephone Co., Springfield.

Mr. Driggs reported that other inquiries answered during the year included: furnishing prints of several types of pole storage platforms; opinion of the Plant Committee concerning toll compensation to switched lines; advisability of the general use of soft iron wire for tie wires as the substitute for pre-cut ties during the present critical material shortage; consideration of the desirability of revision of the booklet "Conversion of Small Exchanges To Dial Operation," and inductive interference caused by high voltage power parallels.

Priority Regulations

GEORGE C. RICHERT, USITA Engineer, emphasized to the Plant Conference that the critical material situation "will worsen considerably before there is any improvement."

"The principal N-P-A order directly affecting the operations of telephone companies," he said, "is Order M-77 (Communications) which became effective on July 27. Under the terms of this order telephone companies having less than 5,000 stations in service are permitted to self-rate their orders. They may apply the allotment number U-1 to orders for controlled materials, except stainless steel and aluminum, required for maintenance, repair and operating (MRO) and for any single operating construction project having a total material cost not exceeding $15,000. Orders to which the allotment number (U-1) has been applied must contain the following certification 'certified under CMP Regulation No. 6 and N-P-A Order M-77 and be signed by a responsible official in accordance with the provisions contained in N-P-A Regulation No. 2. Orders so rated should indicate the quarter during which delivery is required, as for example, U-1-4Q51 in the case of orders in which delivery is required during the fourth quarter of this year.

"Companies in this category are also permitted to apply the rating and allotment number "DO-U-1" to orders for other than controlled materials required for use in connection with controlled materials for any single operating construction project having a total material cost of not more than $15,000. The date on which delivery is required must also be shown on the orders."

Mr. Richert stated that such companies requiring controlled materials for any single project having a total material cost in excess of $15,000 must submit an application on Form NPAF-117 in quadruplicate to the Communications Equipment Division of the N-P-A for authorization to use an allotment number and rating to obtain such materials.

"These applications," he said, "must be submitted to the N-P-A Communications Equipment Division 60 days in advance of the beginning of the quarter in which delivery of the materials is required. In this connection the N-P-A Communications Equipment Division requested in an Administrative Letter that applications for first quarter 1952 requirements be submitted 90 days prior to the beginning of the quarter. As a result, a number of Independent companies were confronted with the added problem of accumulating the necessary supporting data and preparing their estimated quarterly requirements 30 days in advance of the date required by the order. However, by having the benefit of this information in advance, the N-P-A Communications Equipment Division was in a position to strengthen its hand considerably preparatory to dealing with other top N-P-A officials with regard to securing the material allocations needed to meet the overall requirements of our branch of the industry."

Mr. Richert explained that in ac-

cordance with the provisions contained in Section 4 of N-P-A Order M-77 companies may use the allotment number "U-2 (Emergency)" to obtain materials in excess of the amounts otherwise permitted to reestablish service following an interruption caused by a breakdown resulting from such extraordinary causes as explosion, fire, floor, etc. "When using this rating," he said, "companies are required to notify the N-P-A Communications Equipment Division accordingly by filing with it Form NPAF-117 within 10 calendar days following the placing of such orders. The form should be accompanied by a statement setting forth factual data justifying the use of the emergency rating.

"Under the order companies are required to include in inventory all items of new and/or salvaged materials and supplies on hand, whether held for current or future use. . . ., until physically incorporated into plant by way of maintenance, repair, construction or otherwise, . . . whether or not such items are carried in a company's accounting records under Materials and Supplies Account; provided, however, that these shall not include: first, segregated stocks of materials of a superceded type which it appears would include such items as old magneto wall sets which have been replaced and are being reserved for possible re-use for conservation purposes; second, construction materials made to particular specifications and reasonably usable only on the specific project for which they are intended; and third, segregated emergency stocks for repair of major breakdowns resulting from fire, flood, explosion, etc. It would appear that construction materials made to particular specifications and reasonably usable only on a specific project might include cable of a particular size and capacity or of a specific cutting length.

"Larger companies, those having 5,000 or more telephones in service, are required to submit to the N-P-A Communications Equipment Division on Form NPAF-117 their quarterly requirements for controlled and non-controlled materials for MRO and operating construction.

"In connection with projects involving the construction of buildings to house central office equipment and having a total material cost exceeding $15,000 companies are required to submit to the N-P-A Communications Equipment Division an application on Form NPAF-117 for an allotment of controlled materials and associated non-controlled materials required for completion of the project."

J. A. McKinzie, Lincoln, Neb., addressed the Plant Conference Oct. 15.

Mr. Richert pointed out that it appears that, at least for the present, building equipment manufactured B product items, such as heating and ventilating materials, plumbing, elevators, electric lighting fixtures, etc., need to be considered when determining quantities of carbon steel and copper as called for in Section I and III of the application, however, the dollar value of such materials should be included in the information called for in item 19 of Section I and item 30 of Section III.

"We have been advised by the N-P-A Communications Equipment Division," he said, "that a number of central office building construction applications contained no information which would indicate what action the applicant proposes to take with regard to completion of the overall project including the installation of central office equipment. It is suggested that when submitting such applications pertinent information relating to the complete program be shown. Information relating to the required delivery date of the central office equipment involved and other pertinent data with regard to the equipment will better enable those processing such applications to determine the necessity for completion of construction of the building as indicated on the application with regard to the time factor involved. It should be borne in mind that separate application should be submitted for the building and for the central office equipment portions of the overall program.

"With regard to the construction of buildings such as warehouses, garages and structures not housing central office equipment, companies are required to submit to the N-P-A Construction Division an application on Form CMP-4C unless completion of such construction will not require delivery of more than 2 tons of carbon steel, including structural steel, or 200 lbs. of copper and copper base alloys."

Mr. Richert urged all companies, when submitting applications to the N-P-A Communications Equipment Division on Form NPAF-117 to pay particular attention to the information called for in Section V.

"We refer specifically," he said, "to the requirement that a statement in support of the need for the requested materials accompany the application. This statement should include all factual information which will enable those processing the application to determine the essentiality of the projects for which the materials are to be used. If your company is having pressure brought to bear by civic and business groups, by your state regulatory body, or if the project is required in order to extend service to defense or defense related activities including defense housing, or to an area producing farm products in sizable quantities, it should draw attention to these factors in the statement accompanying its application.

Mr. Richert re-emphasized that there is reason to believe that telephone companies will for a number of months in the future "find it increasingly difficult to meet service demands because of material shortages."

"It is not yet known," he said, "to what extent the allotments of critical materials to the communications industry will continue to approximate its needs. You may rest assured, however, that our claimant agency, the Communications Equipment Division of the N-P-A will make every effort to obtain for our industry its fair share of these materials. We are assured that under the very capable direction of Mr. Robert E. Williams, who has been given a six-months leave of absence from his duties as an official of the Automatic Electric Company to head the important work in which the Division is engaged, will be particularly mindful of the needs of the smaller Independent telephone companies."

Wire Plant Construction And Maintenance

DESCRIBING experiences with wire construction and maintenance procedures developed within recent years in an effort to attain

the cost reduction goal, J. A. McKinzie of the Lincoln (Neb.) Telephone & Telegraph Co., and director of the USITA Sub-committee on Wire Plant, reported that tree clearance on open-wire lines is the chief item of expense in the smaller exchanges.

"To reduce this high cost," he said, "two methods of mass eradication of interfering trees and underbrush have been adopted . . . clearing the right of way with a bulldozer and killing woody plants with herbicides. When permission cannot be obtained from abutting property owners for these operations, the poles are raked, or side arms placed on the poles to carry the wires past the interfering trees, or, if possible, an easement is obtained to set the poles on a private right of way free from interfering trees and brush. . ."

Mr. McKinzie reported that several methods have been developed for spraying right of ways. One method is to spray the entire area of the right of way, thoroughly wetting the foliage of trees and shrubs with the herbicide. Standard herbicide, mixed with water, are employed in proportions recommended by the manufacturer of the spray chemicals.

"One spraying procedure," he said, "makes use of an airplane to spray the right of way much in the same manner as dusting of farm crops with insecticide by a low flying airplane. In a recent demonstration, a commercial crop duster flew along an osage orange hedge row, one half mile long and 16 to 20 feet high, spraying the hedge with a herbicide that completely killed the shrubs. The pilot required only 15 minutes from the time of leaving for the spraying operation until he returned. Although a field of corn was growing adjacent to the hedgerow, no harm was done to the corn. The cost of spraying right of way by airplane is understood to be $50.00 per mile in some localities. . . ."

Commenting on the REA expansion of power lines into rural territory, Mr. McKinzie stated that although it was necessary to go to considerable expense to improve the electrical balance of the lines, the removal of incidental grounds on the line, mostly due to tree contacts, and the cutting out of high resistance splices brought about marked improvements in transmission and signaling on the lines.

"Better transposing," he said, "of the lines to improve telephone line balance with respect to the parallel ing power lines also improved the cross talk balance and reduced cross talk trouble in crossarm leads.

(*Please turn to page* 62)

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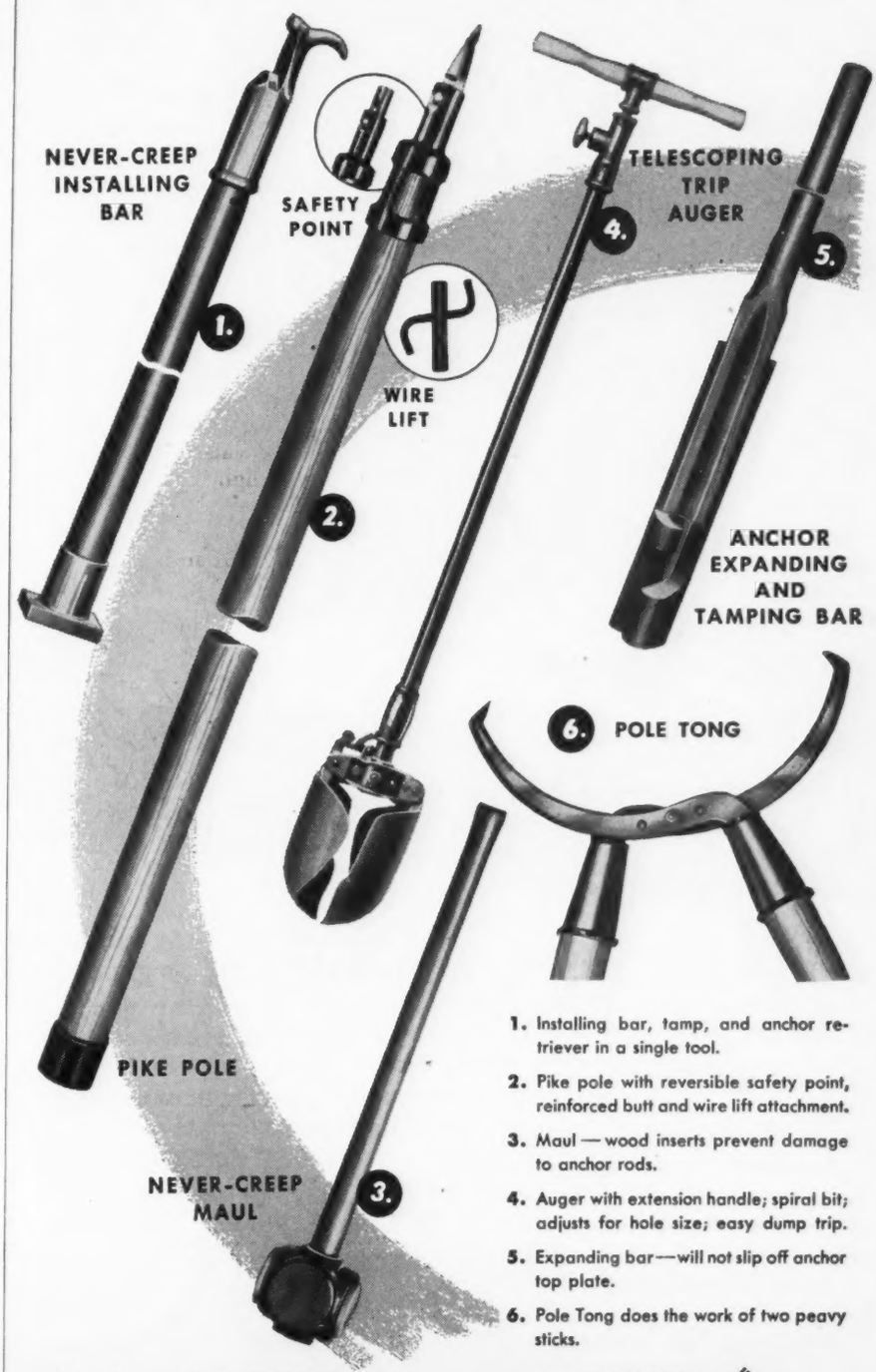

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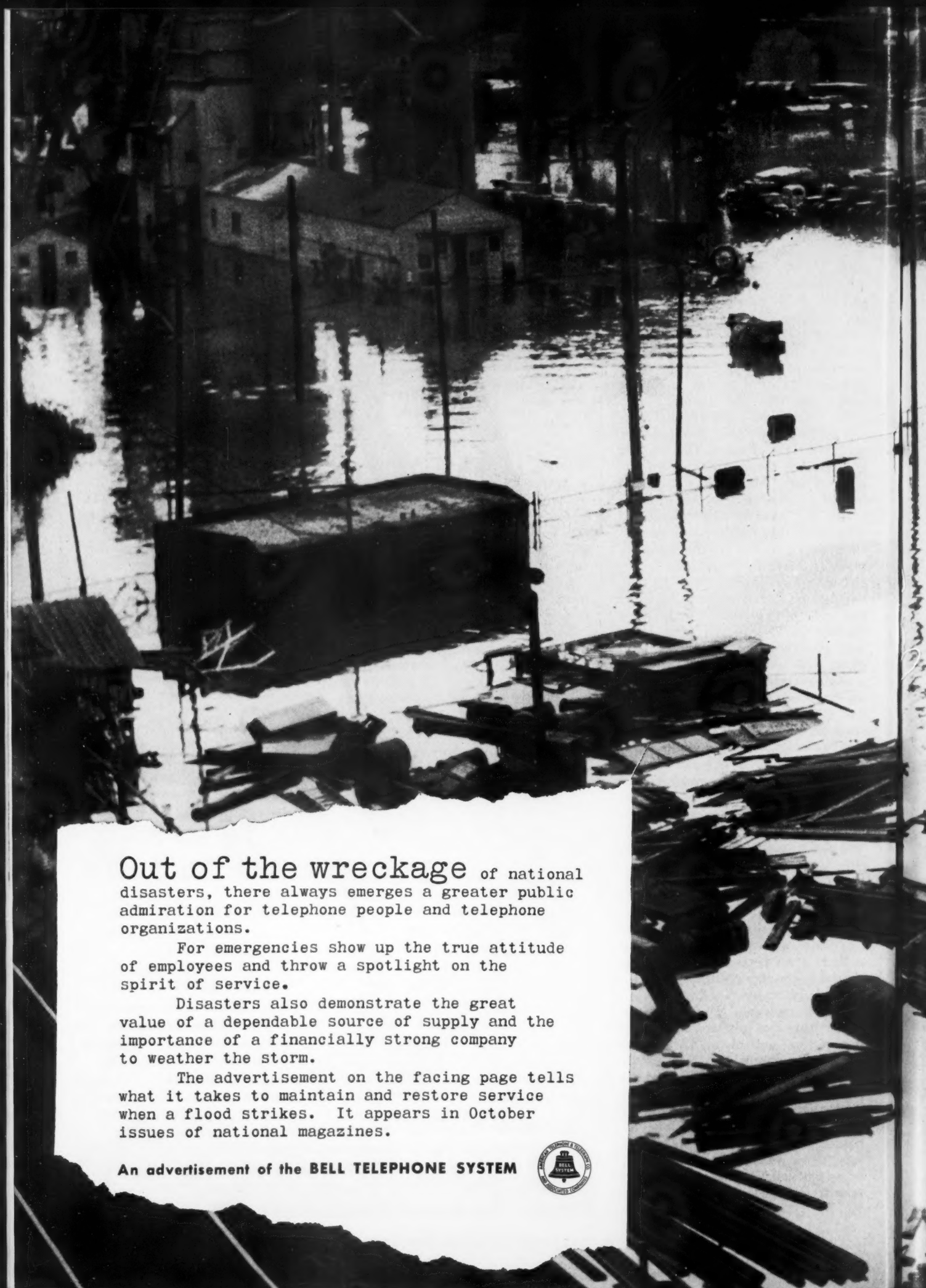

Out of the wreckage of national disasters, there always emerges a greater public admiration for telephone people and telephone organizations.

For emergencies show up the true attitude of employees and throw a spotlight on the spirit of service.

Disasters also demonstrate the great value of a dependable source of supply and the importance of a financially strong company to weather the storm.

The advertisement on the facing page tells what it takes to maintain and restore service when a flood strikes. It appears in October issues of national magazines.

An advertisement of the BELL TELEPHONE SYSTEM

Meeting the Emergency. Telephone people not only worked valiantly to restore service but to keep it going. Dikes of sandbags were thrown around telephone offices. Switchboards raised above rising waters. Emergency power plants set up. Mobile radio telephones rushed to towns where telephone offices were washed out.

FIGHTING THE NATION'S COSTLIEST FLOOD

From the flooded sections of Missouri, Kansas and Oklahoma have come stories of the loyalty, skill and courage of telephone people in one of the Nation's worst floods.

Many returned from vacations to help. In one town, a single radio appeal for former operators brought twice as many as were needed. Hundreds of trained telephone people from other states were rushed to the scene.

Once again the Western Electric Company — the Bell System's manufacturing and supply unit — proved its value in an emergency. By plane, fast freight and truck it rushed millions of feet of cable and wire, telephones, switchboards and other needed equipment.

No one can tell when or where such emergencies will occur, but the Bell System has to be ready and able to handle them when they happen. That means financially able as well as physically able.

This points up again that it takes a financially strong telephone company, with a strong supply organization like Western Electric, to give the Nation the service it requires.

BELL TELEPHONE SYSTEM

(Continued from page 59)

"In the past, it had been difficult to secure permission from abutting property owners to remove trees and shrubs in the way of farm lines. Considerable persuasion was often required to secure the minimum of trimming and possibly one or two feet of clearance was all that could be obtained. With the spread of rural electrification, however, property owners who wished to electrify their farms soon realized that they could not get dependable electric service unless the power company's lines were free from contact with their trees. In most cases the REA refused to extend their lines to serve a customer until they could be assured of an unobstructed right of way for their lines."

Mr. McKinzie stated that as the power customers became more and more dependent on electricity for power and lighting purposes on their farms, those who did not have telephone service found it desirable to subscribe to the service. "These and other subscribers," he said, "began to consider good telephone service of equal value with reliable electric light and power service. The net result has been that subscribers generally cooperate when the telephone company finds it necessary to remove interfering trees and shrubs to keep their lines free from trouble . . ."

Among other subjects discussed by Mr. McKinzie were, defective splices, test clamps, tap compression sleeves, buffer protection, drop wire, and long span construction. Recommendations made by Mr. McKinzie included:

(1) Use of compression type sleeves to eliminate defective splices in line wires.

(2) Use of tap compression sleeves in connecting drop wires and spurs to open wire and in making party line taps on drop wires.

(3) Use of buffer protection in locations where considerable trouble is experienced with lightning damage to cable at the junction with open wire. Buffer protection involves the use of auxiliary protectors on the open wire lines at least three span lengths and not more than one half mile away from the junction pole. These auxiliary protectors by-pass the major part of a lightning surge or current from a power line cross to ground and allow the standard protectors on the junction pole to absorb the remaining energy. Outdoor protector mountings with 100mil air gap protector blocks are used.

General Conditions For Joint Ownership of Poles

W. O. TRETTIN, vice president and chief engineer of the Illinois Commercial Telephone Co., Springfield, Ill., told the USITA Plant Conference Oct. 15, the Sub-Committee on Joint Pole Use had in March, 1951, prepared a simplified form of agreement for urban use and an agreement for rural joint use; both agreements to be on a rental basis following the cost allocation principle incorporated in the agreement submitted at the 1950 USITA convention.

"The three agreements referred to," he said, "all provided for rental charges for the use of poles and undivided ownership of individual poles or groups of poles. It was recognized that there were situations where the ownership of fractional interests by each of the contracting parties might be preferred and this Sub-Committee was instructed to prepare a specimen agreement of that type."

Mr. Trettin stated that since the basic reasoning for the application of differential rentals in the three previously submitted rental type agree-

(*Please turn to page 64*)

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ments appeared to meet with the general approval in the industry the same reasoning was used in the new joint ownership agreement.

"The agreement now presented," he said, "is essentially the same as the rental agreement presented last year except that wording and certain conditions were changed to cover occupancy by reason of percentage ownership rather than by payment of rentals. . . . "

Mr. Trettin distributed copies of the ownership type of agreement to those attending the conference and it is recommended that interested parties obtain copies of the agreement direct from the Washington, D. C. office of the USITA.

Modern Cable Testing Techniques

DANIEL S. SEITZ, of the York (Pa.) Telephone & Telegraph Co. told the USITA Plant Conference Oct. 15 that modern cable testing techniques are worthless unless implemented with modern testing equipment.

"Good testing instruments," he said, "like other good tools are essential in every phase of telephone work, engineering, design, construction, maintenance, etc. . . . The most expensive or complicated testing equipment is not always the most desirable for making a particular test, but rather one that is fitted for the job. When purchasing any testing equipment, the first consideration should be—will it do the job accurately and efficiently? Secondly, is it rugged enough to withstand handling in the field? And last, is the cost within our budget?"

Stating that the size and type of cable plant determines, to a great extent the amount and kind of instruments that should be provided for the efficient operation of any cable system, Mr. Seitz made suggestions applicable to various size cable plants, beginning with the very small installation and including such items as: the Multimeter for testing cable; the tone and exploring coil for locating certain cable faults; the simple battery and receiver test for high resistance trouble; pair identification testing; underground structure location testing; pressure testing with nitrogen or compressed air; the Wheatstone Bridge for resistance and fault location testing; fault analysis test methods; the bridge "Megger" for cable testing; the capacity unbalance bridge for testing quads; meters for electrolysis testing, and electronic insulation testing.

"A multimeter," he said, "costing $25 or less, will be found most useful for making numerous tests about the plant. One such meter is available with a 3″ x 3¾″ scale. This large scale meter is not only desirable because it is easy to read, but it is graduated so that it may be read to .1 ohm. From zero to 5 ohms each ohm is divided by five graduations, or .2 ohm per scale division. However, the space between the scale markings allows one to estimate the resistance being measured to within .1 ohm in this low range. . . ."

Mr. Seitz recommended this type meter for analyzing nearly every kind of cable fault, especially in the small plant because it is inexpensive and serves many purposes." This meter," he said, "while not as accurate as a good Wheatstone bridge, will give indications relatively accurate and thoroughly dependable for the following tests: By setting the dial to read ohms and connecting one test lead to ground while touching the spare cable terminals in the central office any deflection will indicate a grounded wire or wires. A meter deflection when connecting the two test leads to the terminals of a pair indicates that the two test leads to the terminals of a

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pair indicates that the pair is short. Crosses may be tested in the same manner."

Mr. Seitz stated that in a medium size cable plant, consisting of both aerial and underground cable, a Wheatstone bridge, useful for all accurate resistance measurements and designed to be used for making Murray and Varley loop cable fault location tests, should be a "must."

"Far too many plant men," he said, "think that the bridge and its application in cable fault location is a mysterious technique. A reasonable amount of study and experimentation will prove that it is within the accomplishment of the average plant man."—The Summary of the USITA Plant Conference will be concluded in the November FORTNIGHTLY TELEPHONE ENGINEER.

Accounting Conference

(Concluded from page 56)

"The reasons," he said, "are: (1) businessmen and the public in general prefer to keep their records of income and expense on a currently monthly basis; (2) the telephone company is reimbursed quicker and thus requires less working capital for the payment of tolls, payrolls, purchases of supplies, etc.; (3) there are fewer subscriber disputed toll charges, as memories are better in the shorter period; (4) in case of a general depression the accounts receivable on a monthly billing basis will be smaller than if on a quarterly billing basis, therefore collection becomes easier with a corresponding reduction in loss through uncollectible accounts.

Mr. Byrne also recommended: (1) that a subscriber ledger be used only by small telephone companies serving up to 300 subscribers because as that number is exceeded it is easier and more economical to use an addressograph stub-billing system which saves 50 to 70 percent of the time required by the ledger system to prepare and record customer's bills; (2) where states permit, customers' bills should be computed on a net rate basis instead of at gross rates from which a discount in deductible if paid on or before a specified date; (3) a cash advance of adequate amount $5.00 to $25 (-more if necessary) be set up on the general ledger and placed in the collection cash drawer to be used for the sole purpose of making change when subscribers pay their bills; (4) amounts

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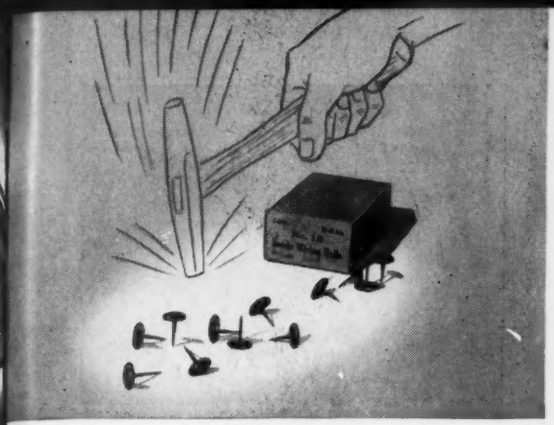

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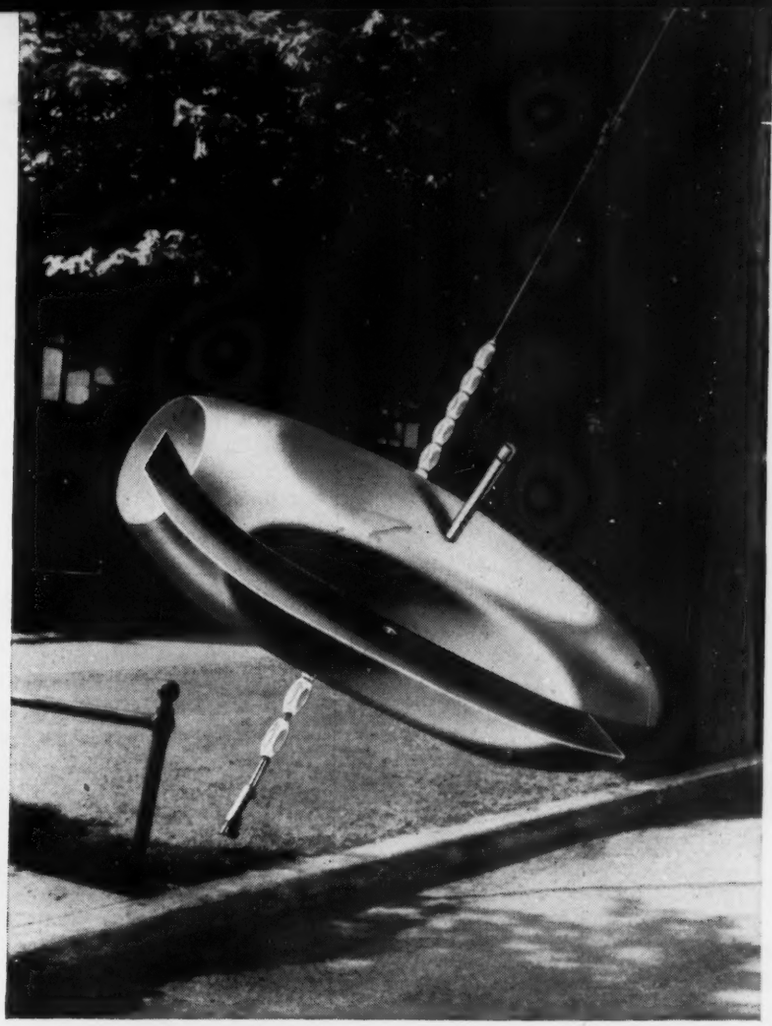

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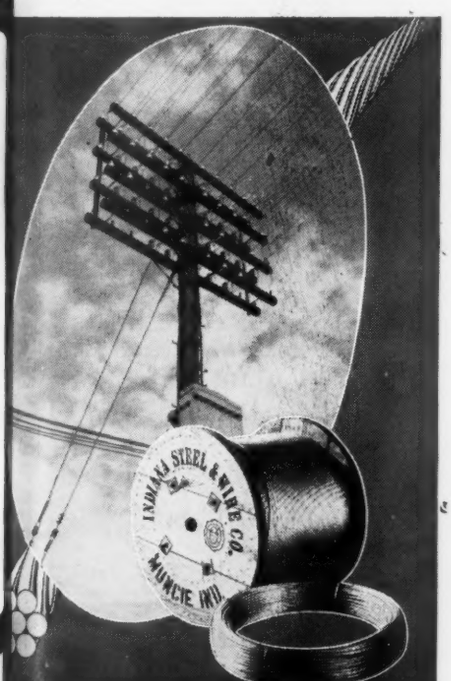

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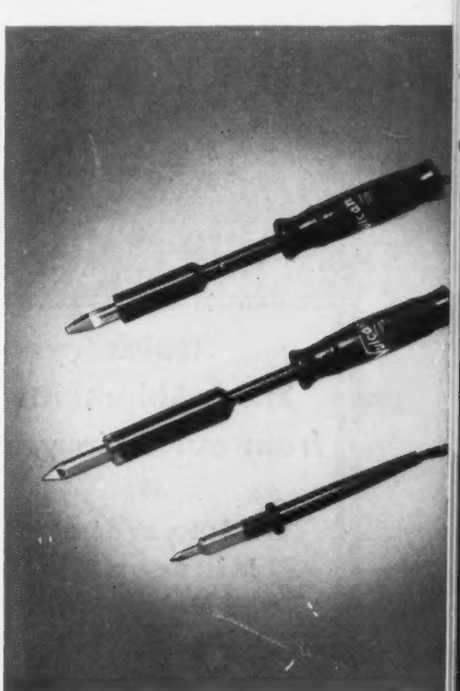

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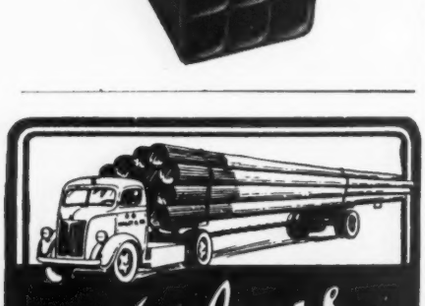


collected daily should be deposited in the local bank during the month so that total bank deposits will equal the sum of the collections made during the month or accounting period, and (5) a small working advance fund should be set up for payment of incidental small bills and expenditures from this fund should be supported by signed receipts or memo slips showing the nature of the expenditures.

Other systems explained by Mr. Byrne included: disbursement vouchers; time reports; summary sheets for plant work; and accounting for labor and materials.

Accounting And Automatic Toll Ticketing

THE FINAL speaker at the Accounting Conference, Mr. Hanson, discussed "Automatic Toll Ticketing As It Relates To Accounting." Describing the "Strowger Automatic Toll Ticketing System," installed at the Park Ridge and Des Plaines, Ill. exchanges of the Middle States Telephone Co. of Illinois, Mr. Hanson stated that the equipment has been in operation for more than a year and the number of calls handled and recorded has been steadily increasing each month.

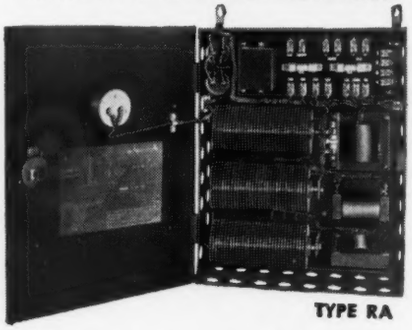
"There were," he said, "216,212 calls recorded in August, for which the average message charge was 17.6 cents. The cost of accounting for these calls, beginning with the transfer from the perforated tape to the completed subscriber's toll statement has averaged .5 of one cent per call for the last four months, which is less than one-half of the cost to the company of manually processing its operator handled toll tickets."

Mr. Hanson stated that the equipment automatically records by punching in code on a 4-channel ticker tape, the following billing information that formerly necessitated the preparation of a toll ticket by an operator: calling station number, class of service, number of minutes of elapsed conversation time; called station answer, date (month and day), and clock time of termination of call.

"There is also recorded on this tape," he said, "the identity number of basic units of equipment used to set up the call, such as: director number, ticketer number, and tabulator number. This information is helpful to the maintenance staff in locating faults in these basic units."

Mr. Hanson concluded his discussion with an explanation of the various operations necessary to produce the complete toll statements.—THE END.

DEPENDABLE POWER
For PAX and PBX SYSTEMS
Electrox*
CONSTANT VOLTAGE BATTERY ELIMINATORS


TYPE RA

The most economical telephone power supply is an Electrox Battery Eliminator

Powered from your regular 110-volt lighting system.

Electrox Eliminators provide smooth, hum-free D.C. of required voltage — eliminating batteries.

Automatic operation. Output voltage remains practically constant, regardless of current drain. When desired, provision can be supplied to switch to emergency power source automatically.

Battery chargers and battery eliminators available in sizes and capacities to meet every power requirement.

See your Electrox Jobber. Write for free Bulletin 1465.

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One million on the road

A million trucks is an impressive number of trucks. It is even more so when you consider this fact: it represents more than half of the Internationals built in the past 44 years.

What proof could be stronger testimony that International Trucks are engineered to give you lower operating and maintenance costs over a longer truck life?

See your nearest International Truck Dealer or Branch for all the facts—join the next million truck users who will have the greatest truck value on the road.

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"Standard of the Highway

WASHINGTON

Washington Bureau Reports

DPA postpones announcements of material allocations for first quarter of 1952 . . . FCC reschedules hearings on interstate telephone rates . . . Anti-gambling legislation includes specific protection for common carriers.

By Roland Davies and Fred Henck

CONCRETE indication that the critical materials situation is going from bad to worse came earlier this month when the Defense Production Administration, which has regularly announced the allotments of the controlled materials—copper, steel, and aluminum—for each industry group well in advance of the start of each quarter, reported that announcements would not be made for the first quarter of 1952 until the allocations had been completely "firmed up" and no possibility of appeal remained.

Basis for the ruling is completely logical. Heretofore, when allocations for each industry were announced, various groups would come before DPA's Program and Requirements Committee to point out that industry A, of no greater essentiality, had received more materials for a given period than industry B. The result was that almost overwhelming pressures would build up to increase industry B's available materials on a comparative basis.

It was believed that allotments to manufacturers for class B (general use) products for the first quarter of 1952 would be drastically cut back for all of industry. As far as communications is concerned, the greatest slash was expected to come in the copper allocation. Materials needed for wire and cable and steel for building construction were expected to be available in quantities far below those received during the last six months of 1951.

Although the DPA decision to keep the allocation figures confidential was supportable on an administrative basis alone, it also was felt to reflect the obvious outlook that materials supplies will be tighter than ever as 1952 gets under way.

Reasons for the worsening situation in critical materials are several. They include the work stoppages in the copper industry, full effects of which are now being felt; droughts in the Pacific Northwest, with resultant reduction in aluminum output; a Chilean ship strike, which tied up shipments of copper from that country on the docks; and production problems which have created a "terrifically tight" situation in the supply of structural steel shapes.

Another telephone industry official now is stepping into the difficult task of helping administer the National Production Authority's Communications Equipment Division in its work as a claimant agency for the communications industry and in allocating critical materials among the companies in the field.

J. Raymond Peterson, assistant vice president on the staff of the vice president-operations of the Southwestern Bell Telephone Co., joined the division staff Oct. 12, and will take over as Deputy Director of the division in November. He will succeed Warren Chase, assistant vice president of the Ohio Bell Telephone Co.

Mr. Peterson's service with the division for a month as a consultant before his assumption of the Deputy Director's duties is in accordance with the rotation plan for division devised by L. W. Hill, President of the Carolina Telephone & Telegraph Co., who recently retired as Director of the office.

Mr. Peterson, who has spent all of his 31-year career in the telephone industry with Southwestern Bell, is equipped to handle the duties of Deputy Director not only by his experience in telephone work, but also by his membership on the Domestic Communications Operating Industry Advisory Committee, organized in the early stages of the defense effort to assist NPA in developing a program for the industry.

With his appointment as Deputy Director, he will resign from the advisory group. The committee will be enlarged with the appointment to it of Mr. Hill and Mr. Chase, under a program whereby officials completing six-month tours of duty with the division will be named to membership on the advisory committee.

FCC Reschedules Hearings on Interstate Telephone Rates

THE VALUE of careful study in such a complex field as telephone rate-making, particularly when complicated questions of interstate vs. intrastate separations are brought into play, has again been demonstrated in the further postponement

by the Federal Communications Commission of its scheduled hearings on a long-distance telephone rate reduction.

Pointing to the continuing joint studies under way by staff subcommittes of the FCC and the National Association of Railroad and Utilities Commissioners, the FCC has set back the dates on which the Bell System is to show cause why interstate telephone rates should not be reduced, and the hearings on the subject, to Nov. 26 and Jan. 7, respectively.

The Commission, in its order, said it had under consideration "pending studies with respect to telephone separations procedures and related matters," which "are still in progress." The postponement was on the Commission's own motion.

The toll rate subcommittee has completed its work on message toll rates and interstate-intrastate disparities, but the two subcommittees on separations revisions have not wound up their tasks.

Anti-Gambling Legislation

APPARENTLY impressed by a strong communications industry presentation that common carriers must not be forced to monitor or censor the messages they transmit to protect themselves from charges of aiding gambling activity, the Senate Interstate and Foreign Commerce Committee, in reporting out anti-gambling legislation, has included specific protection for common carriers.

In effect, the bill reported out (S.2116) provides that it will not be unlawful for a common carrier to transmit gambling communications unless it has been advised by the appropriate law enforcement officials that the facilities involved are being, or will be, used for illegal purposes.

Spokesmen for the Bell System and the Western Union Telegraph Co. had pointed out in hearings a week before the bill was reported out that the language of the measure might make it necessary for them to listen to telephone calls or read telegrams to protect themselves from a "barrage of indictments."

As the major bill—S.2116, which bans the pre-race transmission of such information as bets or odds to anyone—was originally written, its penalties were directed as much against the common carriers as against the persons actually sending the information. It was this feature which particularly drew the fire of Bell System and Western Union witnesses.

The amended bill thus carries a specific provision that "it shall be

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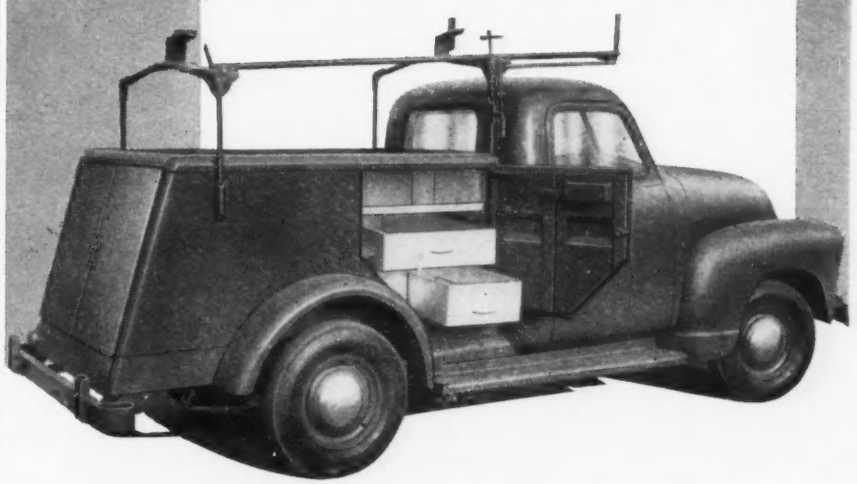
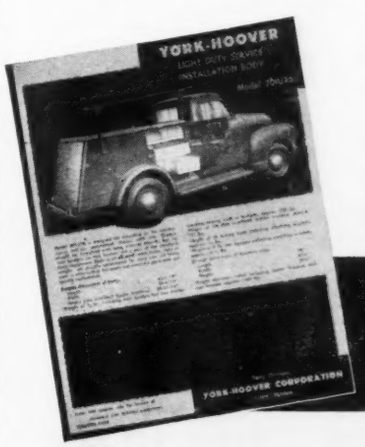
MODEL 201U76

new LIGHT DUTY SERVICE INSTALLATION BODY



WHAT THE MODEL 201U76 BODY WILL DO FOR YOU...

Light duty service work must be fast and efficient. Materials and tools must be readily accessible. That is why the new York-Hoover Model 201U76 Body was designed . . . especially for **your** light duty service work . . . for **your** convenience . . . for **quicker, better service.** Efficient design and sturdy construction, combine to provide this **faster, better service** for you . . . at **less** cost.



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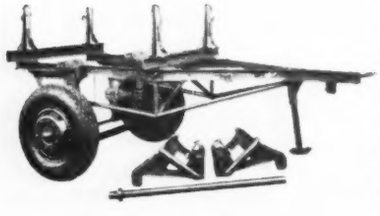
York-Hoover Corporation
YORK, PENNSYLVANIA
Body Division

HIGHWAY
Cable Reel Trailers
Quick loading - Easy riding

This is one model from the complete line of Highway Utility Trailer Equipment and accessories. It is used by utility companies all over the country for loading and transporting heavy and unwieldy reels of cable. It is quick and simple to load. Has a low center of gravity for safe transportation and braking at high speeds. There are two models with adjustable saddle guides to accommodate reels from 34″ to 48″ in width. Comes equipped with safety ropes and attaching parts. See your Highway representative for full information, or call or write for complete catalog.



COMBINATION POLE, CABLE REEL TRAILER

Quickly adjustable for either poles or cable reels. For poles, bolsters with sliding cam locking stanchions are easily mounted or unmounted. Cable reel saddles can be securely attached in a minute or two. Carries cable reels as effectively as standard cable reel trailer. Adjustable to different reel widths.

POLE TRAILER

This well-known Highway trailer has the strength to carry the occasional heavy load of poles while it is light in weight for economical carrying of average loads of poles. Load binding winch mounted on rear cross member, king pole binder on front cross member, 4 cam lock sliding stanchions make for safe transportation.

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unlawful for any common carrier subject to the jurisdiction of the Federal Communications Commission to lease or otherwise furnish any communications facility or to render service by means of such facility after written notification has been sent to such carrier by a federal, state, or local law enforcement agency, that such facility is being used by any person for the purpose of transmitting or receiving gambling information in interstate or foreign commerce, if such facility is used by such person for such purpose after such notification."

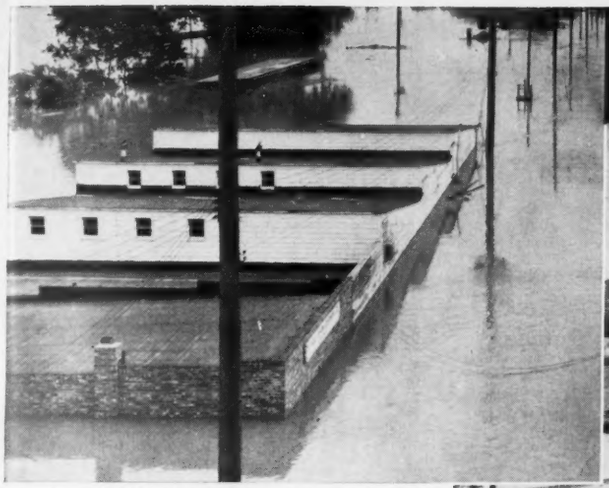
Since the wording "not a common carrier" was included in a section of the bill, spelling out illegal actions, immediately preceding the above-quoted language, all this boils down—minus the "suches"—to the following: so far as the bill and interstate commerce are concerned, a communications carrier cannot be held liable for gambling information sent by a bettor, bookmaker, or their agents over the carrier's facilities until *after* a policeman or prosecutor has notified the company officially and in writing that a given facility is being used for gambling purposes.

This is just about exactly the point the communications companies made in the hearings before the Interstate Commerce Committee—that communications companies and their employees are not detectives, and also that a communications carrier is not any more guilty of acting illegally if someone telephones a bet over its lines than a railroad is if a known criminal travels over it.

As a practical matter, of course, this Senate bill will not become law this year, and it possibly will not even be passed by the Senate, because of the drive toward adjournment. But bills reported out this year are carried over into the second session of the present 82nd Congress, next year; 1952 is an election year; and it might just be that an anti-gambling bill will be attractive to Congressmen "sweating out" the 1952 balloting. At any rate, there seems now to be more prospect for enactment of anti-gambling legislation next year than appeared to be the case only a few weeks ago.

In all, the Senate committee reported out four anti-gambling bills. One is opposed to the pre-race prohibition measure, and apparently was reported out only as a courtesy to the Senate special crime investigating group which sponsored it. There appeared to be little doubt that most of the Senate Interstate Commerce Committee would support S. 2116.

FLOODED OUT...



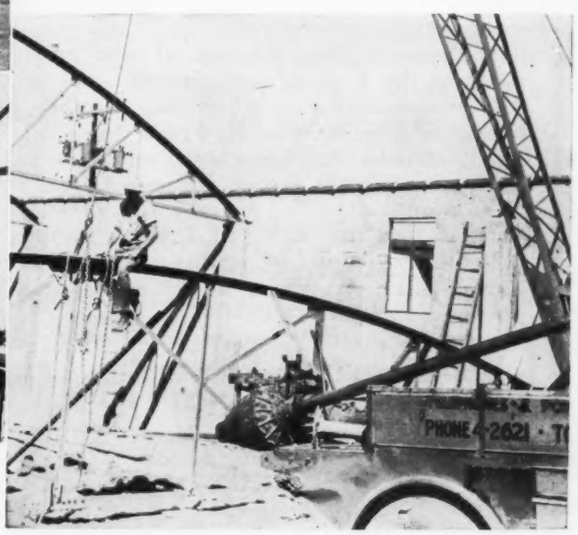
GREAT TOPEKA FLOOD, July 13, 1951. Pictures show inundation of the Cable Spinning Equipment Company. Plant and machine tools have been renovated, with the loss of only one motor.

But We're Coming Back Stronger Than Ever!

As the flood crested, ground was broken for new plants on higher ground. Disaster proved the fine loyalty of our employees. Not one quit the job. Many worked day and night with our trucks to evacuate flood refugees. We also want to thank our customers for their consideration and patience during the emergency. Soon we will offer greatly expanded production facilities to render an even better service in the telephone field.

Our employees pitched in to build new plants.

Our telephone construction equipment was utilized.



Construction is being completed in record time.

CABLE SPINNING EQUIPMENT CO.

TOPEKA, KANSAS Phone 2-7234

"It's Your Money They're Spending . . ."

HERE AND THERE on the back pages of papers and magazines appear items that leave the taxpayer with a feeling of frustration and bewilderment—to-wit:—

• • •

The Navy isn't hoarding 132 million useless oyster forks, as charged. It is stuck with only 125,000 left over from World War II.

• • •

Representative Chas. B. Brownson (Indiana), who is in the paint business himself, has demanded to know why the Navy in 1944 and 1945, bought paint in such volume as could cover 10,666 battleships of the Missouri class.

And what was worse, according to Brownson, the Navy ultimately disposed of tons of it as surplus to a German corporation.

On top of that, he now declares a German firm has offered to sell the material back to the American paint company that made it—at less than half-price.

• • •

The Army has purchased 68,000,000 can openers in the past year for its 1,500,000-man establishment.

• • •

In the same month that the Department of Agriculture was selling 550,000,000 pounds of butter as surplus to Italy at 15c a pound, the Quartermaster Corps bought 5,000,000 pounds of oleomargarine.

• • •

Prior to the outbreak of war in Korea, civilian employment in the Federal government had leveled off at about two million—nearly two times the number employed at the outbreak of World War II. From June 30, 1950, to January 1, 1951, civilian employes were added to government payrolls at the rate of 1000 a day. During January the hiring rate went up to 2000 a day. The present budget will problably add 500,000 more. Then the army of U.S. Government civilian employes will be nearly as big as the combined total of all men in the Army, Navy, Air Force and Marines as of last spring.

BOX SCORE
CIVILIAN (Non-Military) EMPLOYEES
EXECUTIVE BRANCH FEDERAL GOVERNMENT

	Employees Added During June	Total Employees June 30, 1951
Defense Department	27,944	1,235,498
All Other	17,121	1,254,033
Total	45,065	2,489,531

(Source—Monthly Reports of United States Civil Service Commission)

• • •

No one begrudges money spent for defense, but in our present economy we cannot afford billions for both defense and waste.

Constructio
With the Doub
and Americ
gould planté.
the aristocrat of
stationary batteries

Many Planté batteries are still in activ
float service after twenty, thirty, even
years! That's because Planté plate
heavy, solid sheets of pure lead. In
batteries Gould has eliminated the pr
cause of self-discharge, capacity losse
shortened battery life. Cut mainten
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TELEPHONES, SWITCHBOARDS

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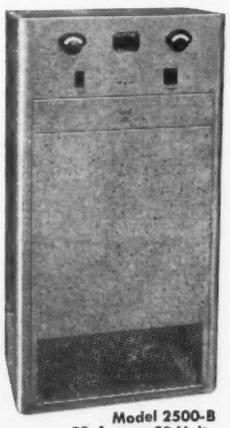
for 3-phase operation . . . be safer and surer with

flotrol automatic battery charger



Model 2500-B
50 Amps., 50 Volts

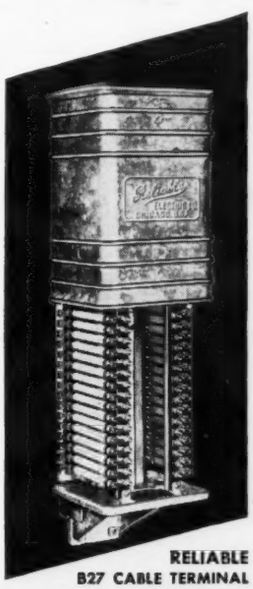
Except for the starting and battery disconnect contactors, the FLOTROL does not contain any moving parts—an assurance of higher efficiency, complete dependability and longer service life. All components are in one cabinet and no special foundations are needed, reducing installation to a minimum. DC voltage delivered is regulated within ± 1%. Complete overload protection is as automatic as charging itself.

WRITE for Bulletin 161—completely describing the FLOTROL system for 3-phase operation.

a product of actual field study

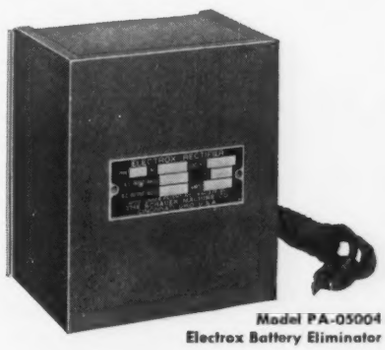
The Reliable B27 Protected Cable Terminal has resulted from basically sound engineering, supported by actual field experience. It places all connections within convenient reach of the lineman without necessity of removing fuses or reaching around the terminal—also a decided advantage in inspecting.

Detachable mounting bracket permits one-man installation. Ground connection is made directly to ground strip, reducing possibility of high resistance ground. Reliable Self-cleaning Sawtooth Discharge Blocks are standard—insuring dissipation of static discharges without danger of unnecessarily grounding the line.



RELIABLE
B27 CABLE TERMINAL

24-hour guaranteed direct current, with electrox battery eliminator



Model PA-05004
Electrox Battery Eliminator

Designed specifically for the Operator's Circuit on Magneto Switchboards, the PA-05004 type illustrated guarantees current even if your AC fails!

When operating from 110 volt, 60 cycle lighting circuit, it delivers a constant, humless direct current. If the alternating current supply fails, a built-in Power-off Relay automatically transfers the operator's circuit to stand-by dry cells.

Other models available for Lamp Signal (PBX) and Automatic (PAX) systems. Products of Rectifier Division, Schauer Manufacturing Corp.

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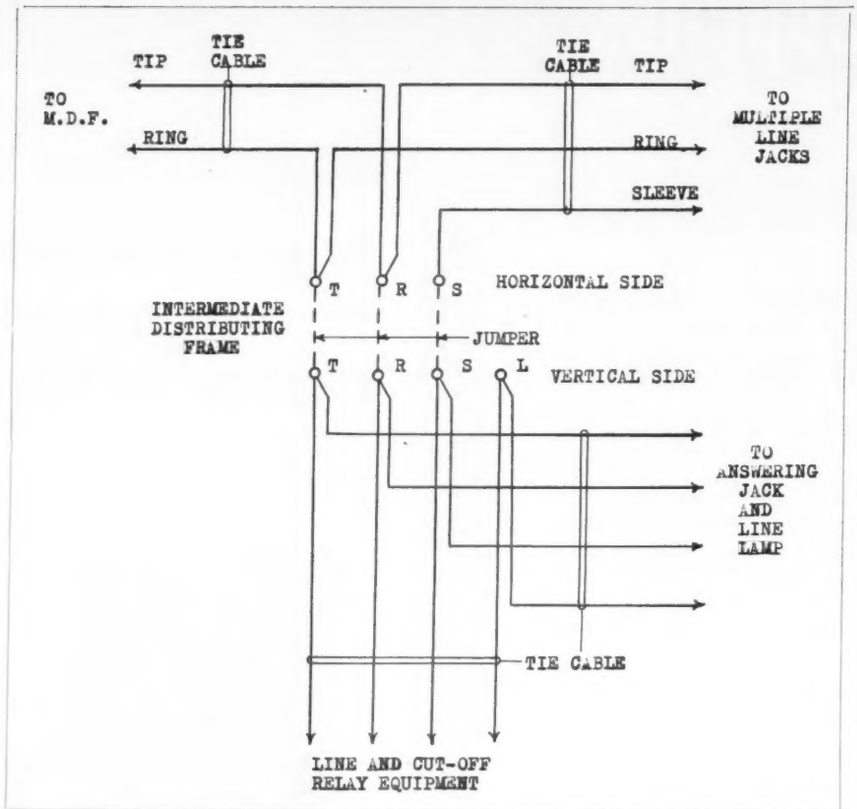


Fig. 58—Schematic of connections on typical manual office distributing frame.

MODERN Central Office MAINTENANCE Practices

Section V-B of Mr. Reed's article discusses—(1) Line Intermediate Distributing Frames, (2) Trunk and Toll Intermediate Distributing Frames, and (3) Placing jumpers. (Section V-A of this article appeared in the October issue of FORTNIGHTLY TELEPHONE ENGINEER.)

By John S. Reed

Lincoln Telephone & Telegraph Co., Lincoln, Nebraska

IN THE larger manual common battery offices, the intermediate distributing frame is used to cross connect any answering jack and its line lamp and line relay to any line group of multiple jacks. This arrangement is intended to distribute the traffic load among the operators' positions in such a way that each operator is given an equal share of the work load in so far as practicable. *Figure* 58 shows the schematic of connections made on this type of frame.

The line intermediate distributing frame provides a place where connector terminals may be cross connected to line finder terminals in an automatic central office. Any line finder terminal can thus be connected to any connector terminal, providing means for distributing the traffic load among working finder groups. As the traffic load changes, redistribution of the line finder assignments can be accomplished by changing the proper jumpers on the line I.D.F.

On the line I.D.F., party line stations may be grouped in any manner desired and moved from one group to another as required to obtain the full number of stations on each party line. In central offices designed to operate on a terminal per station basis, the shifting of stations from one party line to another can be accomplished without changing the corresponding directory numbers. Any telephone number may be assigned to any subscriber regardless of whether he is on an individual, two-party, or four-party line.

When a subscriber discontinues service, the connector used with his line can be dissociated from the line equipment at the line I.D.F. and placed on intercepting service. The line equipment then can be reassigned immediately.

The party line grouping and interceping service connections on a line I.D.F. are illustrated in *Figure* 59. The arrangement shown is for harmonic ringing on party lines. When two-party divided line ringing is utilized, the jumpers are run to the proper terminals of the line finder equipment that will provide ringing over one side or the other of the line as required for the desired party line connection.

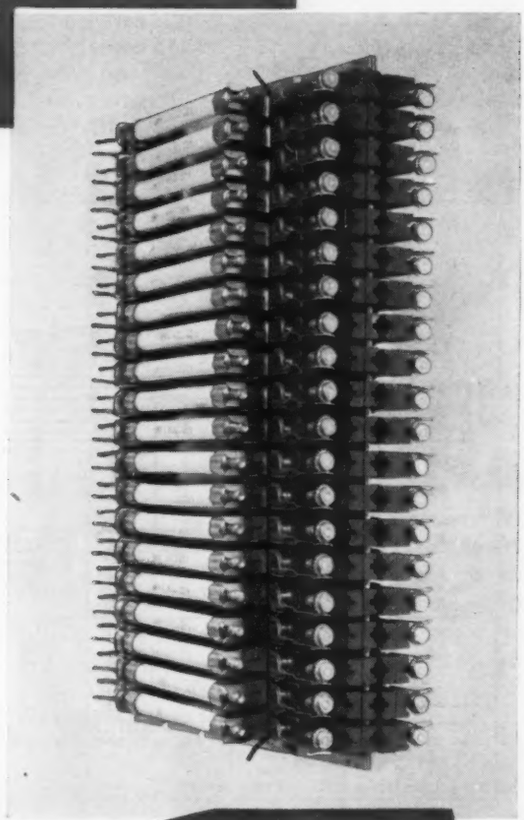
Figures 60 *and* 61 illustrate a typical line intermediate distributing frame on a separate structure paralleling the main distributing frame. In central offices where it is desired to provide a line I.D.F. without erecting a separate structure, a combined main frame and line I.D.F. can be installed as indicated in *Figure* 62. The schematic of connections for the circuits in this group is shown in *Figure* 63.

Trunk and Toll Intermediate Distributing Frames

OTHER TYPES of intermediate distributing frames may be employed. Thus, a trunk intermediate frame may be utilized in an automatic central office for cross connecting line finders to first selectors, also to cross connect outgoing trunks from selector levels to outgoing secondary line switches and repeaters. A toll intermediate distributing frame also may be provided for connecting toll lines to their trunk circuits and associated equipment and then distributing the circuits to the toll switchboards.

(*Please turn to page* 78)

1 3 LIGHTNING, POWER CROSS AND SNEAK CURRENT PROTECTION

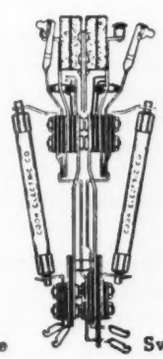


Cook Type 105

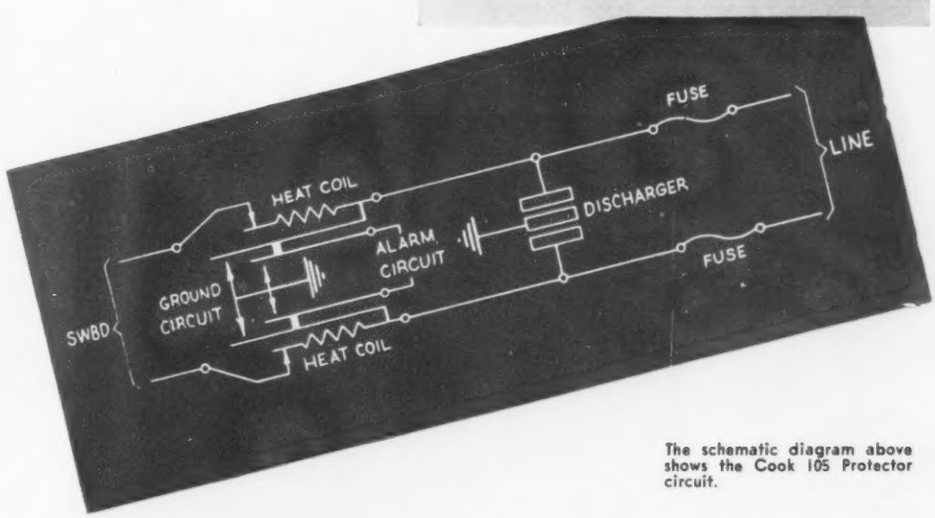
CENTRAL OFFICE PROTECTOR

THE Cook 105 Protector has been a leader for many years in the protection of critical circuits, where continuity of service for toll line protection is vital.

For convenience, the equipment is replaceable without tools, and a service observation and test plug is provided for testing without the removal of heat coils, fuses or arresters.



A cross section showing the construction features of the Cook 105 Protector unit.



The schematic diagram above shows the Cook 105 Protector circuit.

COOK ELECTRIC Company

2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS

In large central offices, the trunk IDF and to toll IDF are usually on separate structures, but in smaller offices, they may be combined as one distributing frame, or may even be part of the main frame.

Placing Jumpers On Distributing Frames

ON SMALL distributing frames, the placing of jumpers is a simple operation, requiring little care beyond seeing that the wires are connected to the proper terminals and that the connections are properly soldered. On larger frames, more skill is needed to properly run the jumpers because of the increased number of connections, the use of special circuits, and the requirement for care in routing the jumpers from one set of terminals to another. The employee assigned to cross connection work should be familiar with the purpose and methods of making the various kinds of cross connections in the central office. A study of circuit drawings and records covering the distributing frame connections will be found helpful in visualizing the location of the connections by protector numbers, rack numbers, and other identifying designations.

No. 22 gauge distributing frame

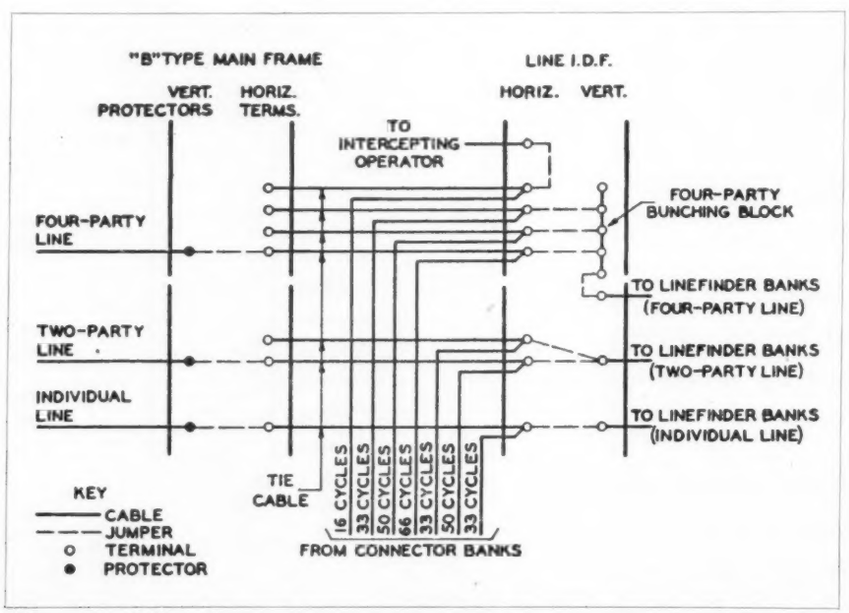


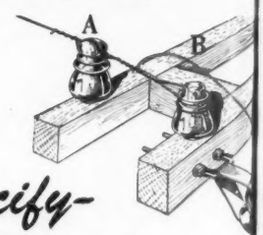
Fig. 59—Schematic of connection on line intermediate distributing frame. (Courtesy of Automatic Electric Company.)

Fig. 60—Vertical side of line intermediate distributing frame in automatic central office. (Note main distributing frame on right side of illustration with overhead runway for cables to the intermediate frame.)

Constructi

With the Doub
and Americ

for dead-ending spans
300 to 400 feet



specify-
hemingray's
No. 110 insulator

This new insulator was desig
to conform with specificatio
the Association of American
roads, for clevis-type dead-
on spans of 300 to 400 fee
the sketch above, "A" and
are Hemingray's No. 43 and
and "C" is the new 110.

The triple upper-skirt rings
duce very low leakage. And
age to lower clevis arm is
duced to a minimum by the
ceptionally deep petticoat.

Packed: 40 to a carton, weig
49½ lbs. A product of Amer
Structural Products Compan

STROMBERG Telephone CARLSON

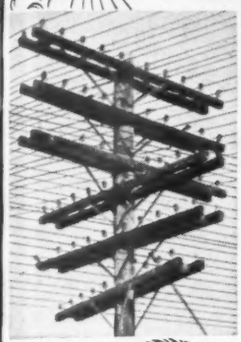
TELEPHONES SWITCHBOARDS

...aterials and Supplies...

...arantee of Stromberg-Carlson ...ading Manufacturers...

"dependable" *means both the trade-mark & the guarantee of cross-arms by*

American Cross-Arm Inc.



The finest pole and wire installation is useless if cross-arms fail. "Dependable" Cross-Arms are all that the name implies—made of sturdy, American woods, long seasoned, fashioned and finished to stand every weather condition from desert heat to mountain blizzards.

In Douglas Fir—Creosoted Yellow Pine or Gulf-Red Cypress.

for better offset dead ends specify

nicopress!

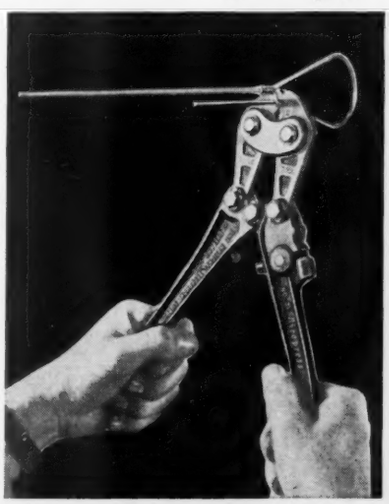
You can't buy better Dead Ends than *Nicopress!*

Designed for use with either copper, Copperweld, or iron wire, *Nicopress* Dead Ends star in strength and tightness.

Installing these Dead Ends is simplicity itself. You need no extra tools—the same tool used in making regular line splices will make the offset dead end as well.

Nicopress Dead Ends make possible a tail of any desired length.

These Nicopress tools are small and compact—can be operated with no trouble at all close to insulators or cross arms.



cook no. 3800

central office protector

Combines cable termination with protection of central office personnel and equipment against high potentials and sneak currents. In operation, it opens the switchboard circuit, grounds the outside line, and operates an alarm circuit. Note these construction and operating features:

1. Provides for temporary disconnect.
2. Self-soldering, low-resistance heat coils easily reset after operation without changing, reversing or re-soldering coils.
3. Line and switchboard connections on opposite sides of protectors.
4. Steel mounting plate for maximum strength.
5. Unit dischargers, consisting of two carbons, separated by acetate dielectric cemented together, permanently grounds the outside line under continuous discharge.
6. Easily tested without removing heat coil; withdrawal of test plug leaves protector in operating condition.

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...PMENT AND ELECTRONIC CARILLONS • INDUSTRIAL INTERCOMMUNICATION SYSTEMS • TELEVISION RADIOS AND RADIO PHONOGRAPHS

wire ordinarily is utilized for the cross connections. Battery feeder circuits, however, require heavier conductors, usually No. 19 or No. 20 gauge wire. When the number of feeders is not too great, two pairs of No. 22 wire may be used in parallel to avoid the necessity for providing more than one size of distributing frame wire. The individual conductors may be tinned or tinned-enameled copper with double cellulose-acetate wrapping, flame-proofed double cotton covering, or plastic insulation.

Salvaging and Storing Removed Jumpers

IN THE CASE of jumpers removed from distributing frames in the course of rearranging or removing cross connections, it is good economy to salvage reusable jumpers. The minimum length to salvage depends on cost of the wire and the labor expense involved in recovering and storing the wire. It was formerly the practice to salvage jumper wire lengths exceeding 6 feet. The economical limit now seems to be a minimum of 10 feet, but the present need to conserve scarce materials may require the use of shorter lengths of salvaged jumper wire when they can be placed. When a large office has cross connection wire of lengths greater than the minimum considered economical to recover, which cannot be used on its distributing frame, it is possible to accumulate such jumpers to reuse in smaller offices within the operating company's area.

Jumper wire should not be spliced in order to obtain a usable length. Spliced jumpers are difficult to run and will cause trouble by snagging on each other and on projecting parts of the frame.

The salvaged jumpers may be stored in one of several ways. The wires may be strung on brackets spaced at intervals underneath horizontal shelves of distributing frames and tagged to indicate their lengths. Alternatively, they may be stored on reels, or coiled up and hung upon harness hooks attached to the wall in a location conveniently near the frame. Instead of being hung on hooks, the wire coils may be stored on an auxiliary shelf mounted underneath the lowest horizontal shelf on the frame. In this case, the shelf is marked off in sections on which the jumpers are laid in piles, each pile containing wires of the same or nearly the same length, usually within two feet.

When harness hooks or storage shelf is used, tagging of the coils can be obviated by designating each hook (or shelf section) with numbers such as "10" for 10 to 12 feet, "12" for 12 to 14 feet, "14" for 14 to 16 feet, etc.

The jumper lengths may be measured by means of a measuring reel having a drum with circumference of 2 feet (7 11/16 inches in diameter) and width of 4 to 6 inches. The reel is provided with two spool heads, one removable, though the latter will not be required except when a very long length of wire is reeled up. After the wire is reeled up, the coil is slipped off the drum and the turns in the coil are counted. The length in feet is obtained by multiplying the number of turns by two.

Another method of measuring the length of recovered jumpers is to use one of the horizontal rows of terminal strips on the main frame as a measuring line. One of the rows that is at a convenient height is marked in one foot intervals beginning at the left end and continuing to the end of the row at the right. The jumper to be measured is fastened temporarily at the left end and laid out along the horizontal shelf to measure its length.

Fig. 61—Horizontal side of line intermediate distributing frame.

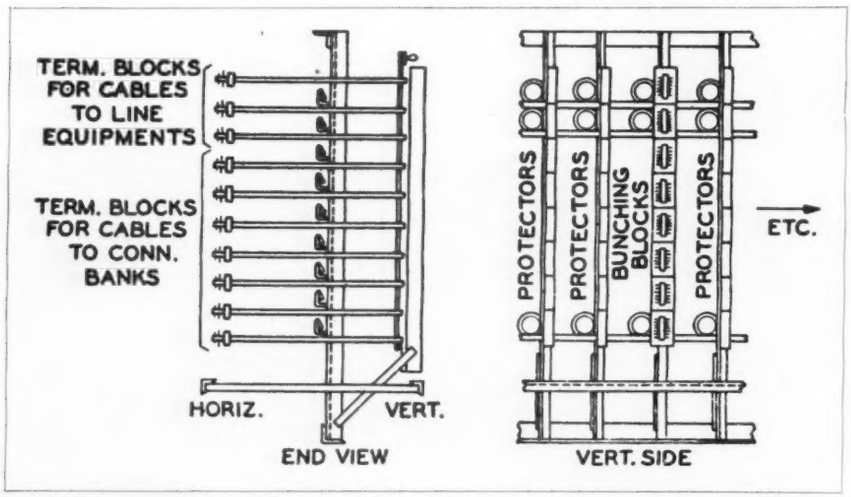

Fig. 62—Details of combined "B" main frame and line I.D.F. as used in medium-sized offices. (Courtesy of Automatic Electric Company.)

Measuring Jumper Length

WHEN REUSING salvaged jumper wire, time and effort can be saved by employing a special chart to determine, from the protector number and the rack number assignments, the length of the jumper required for the run. *Figure* 64 illustrates a portion of the complete chart used in a 10,000 line office having a main frame with 46 vertical columns of protector

pairs and 10 horizontal shelves, each shelf being 34 feet long.

In this chart, the horizontal rows of terminal strips are designated "0," "1," "2," "3," etc. Each row is marked off in feet beginning at the left end. Under each foot mark is entered the rack number at this location; thus, 1'—30; 2'—60; 3'—90, etc. At the top of the charts are located the protector numbers heading the vertical columns of protector pairs; for example, 1001, 1251, 1601, 1851, etc.

In each horizontal row on the chart are listed the lengths of jumpers required to reach from selected points in the vertical column of protectors to a point on the horizontal strip back of and in line with the vertical column. Thus, for the vertical column headed 1001, the length to reach from protector No. 1055 to the point in the horizontal row "0" directly back of this vertical column would be 4 feet, and from protector No. 1230 to the same point in this row would be 7 feet. For each horizontal row, the lengths to reach the same protector numbers in this vertical column would be different. In row "3," for example, the jumper length to protector No. 1050 would be 2 feet, and to protector No. 1230, 5 feet. These lengths are obtained by running a tape line to selected protector pairs in one vertical column and determining the lengths for these pairs. The lengths will be the same for corresponding pairs in each vertical column along the main frame.

To illustrate the use of the chart in determining the length of a jumper, let us assume that protector No. 2000 is to be connected to rack No. 2230. Referring to the chart, it will be seen that this rack number is located nearly 8 feet from the left end of the horizontal row "2". Running back to the vertical column headed protector No. 1851, it is seen that protector No. 2000 is in that column. This column is nearly 5 feet from the left end of the horizontal row. Subtracting 5 from 8 leaves 3 feet, the distance the jumper is to run along the horizontal shelf. To reach protector No. 2000 from the horizontal shelf requires 6 feet of wire. The total length then is 3 plus 6 or 9 feet. In this case, a 10-foot coil of jumper wire is selected for this run.—*To be continued in the Nov. Fortnightly Telephone Engineer. . . . Questions covering Sections VA-B-C will appear in the Nov. Fortnightly Telephone Engineer.*

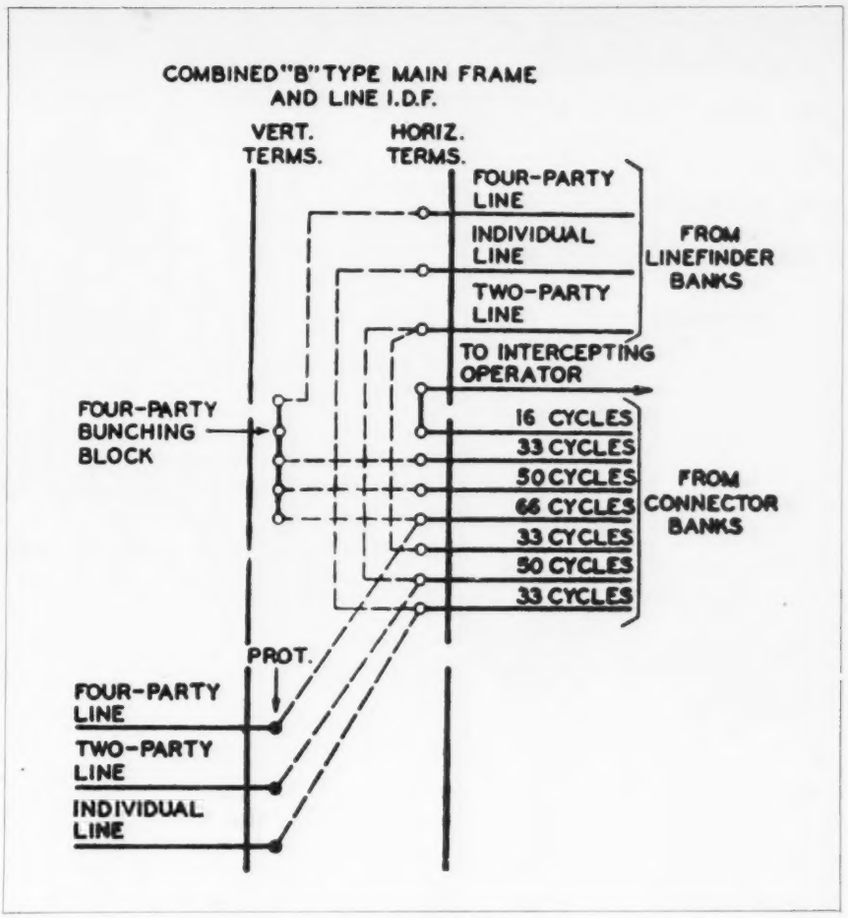

Fig. 63—Schematic of connections used on the combined main frame and line I.D.F. illustrated in Figure 62. (Courtesy of Automatic Electric Company.)

PROTECTOR NUMBERS

	1001	1251	1601	1851	2101	2251	2401	2551	2701	2851
"0"	1001 - 2' 10 - 2' 20 - 3' 55 - 4' 80 - 5' 1000 - 6' 1230 - 7' 50 - 8'			1851 - 2' 60 - 2' 80 - 3' 2005 - 4' 30 - 5' 50 - 6' 80 - 7' 2000 - 8'						
RACK NOS.	1' 30	2' 60	3' 90	4' 1020	5' 1050	6' 1080	7' 2010	8' 2040		
"1"	1001 - 2' 20 - 2' 45 - 3' 70 - 4' 95 - 5' 1225 - 6' 50 - 7'			1851 - 2' 70 - 2' 95 - 3' 2020 - 4' 45 - 5' 75 - 6' 2000 - 7'						
RACK NOS.	1' 130	2' 160	3' 190	4' 1120	5' 1150	6' 1180	7' 2110	8' 2140		
"2"	1001 - 2' 30 - 2' 55 - 3' 85 - 4' 1210 - 5' 50 - 6'			1851 - 2' 80 - 2' 2005 - 3' 35 - 4' 60 - 5' 2000 - 6'						
RACK NOS.	1' 230	2' 260	3' 290	4' 1220	5' 1250	6' 1280	7' 2210	8' 2240		
"3"	1001 - 3' 30 - 2' 50 - 2' 1205 - 4' 30 - 5' 50 - 6'			1851 - 3' 80 - 2' 1800 - 2' 35 - 4' 60 - 5' 2000 - 6'						
RACK NOS.	1' 330	2' 360	3' 390	4' 1320	5' 1350	6' 1380	7' 2310	8' 2340		

Fig. 64—Illustrating portion of chart used for determining lengths of salvaged jumper wire for installing on main distributing frame.

CUT COSTS
WITH TIMESAVING
GREENLEE TOOLS

...push pipe underground with a
GREENLEE PIPE PUSHER

Here's the quick, simple way to install underground pipe. With the GREENLEE Pusher *one man* pushes pipe *under* streets, walks, railways, lawns, flooring. No tearing up of pavement...eliminates extensive ditching, back-filling, tamping, tunneling, repaving. Cuts job time to a fraction. Two models to fit your jobs exactly—hand or power-pump operated.

Other GREENLEE tools for telephone work . . .

Do the job faster, better with high quality GREENLEE Car Bits for pole work . . . Electricians' Auger Bits of special design for electrical installation work . . . Bell Hangers' Drills of the "Feeler Bit" type . . . Expansive Bits for boring ½" to 4" holes . . . and GREENLEE Angle-Screw Drivers which eliminate pre-boring for angle-screw installations.

MACHINERY & TOOLS
GREENLEE

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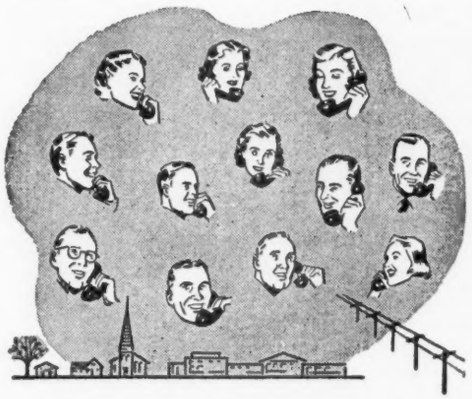
MANAGEMENT



Small Company Talk

"In the natural course of growing there comes a point when you realize the importance of proper accounting for Materials and Supplies."

By Bill Corman
Contributing Editor

HI, NEIGHBOR! Let's talk a little this time about an accounting practice that may worry you some, if you have gotten into it, or that probably will worry you at some future date. For, in the natural course of growing, there comes a point when you realize that, like it or no, you ought to be doing something about it. And it's the handling of Materials and Supplies—not the physical handling of the bolts and wire, and all the rest, but the *accounting* end of the business.

Some of you may remember several months ago I delved into the subject of "Expenditures and Expenses". In that article there was short mention of the Material and Supplies accounting, to the effect that while all the money spent buying Materials and Supplies was an "expenditure", that only part of it was an "expense".

At one time or another also, I have mentioned that in the very small company I would not advise keeping a "Materials and Supply" account. However, as a telephone company grows larger, and especially when it begins to get more than one or two men in its construction and repair or plant department, it is time to begin to think about such an account in your books.

If you don't keep the account, of course, the method of distributing your expenditures for material is

(*Please turn to page* 84)

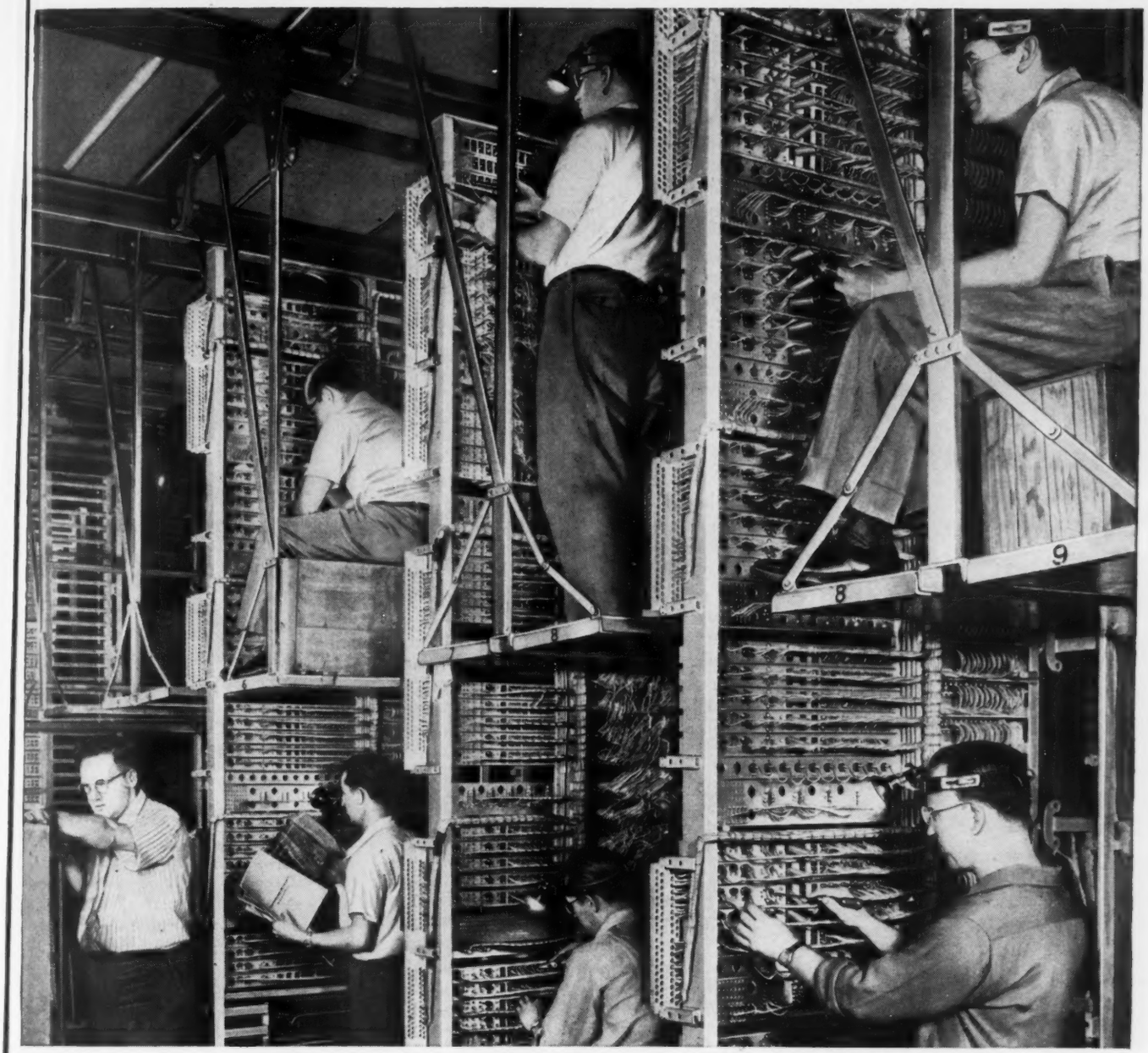
RECORD OF MATERIALS USED OR RECOVERED

REMARKS:

PRINCIPAL ITEMS OF EQUIPMENT	WHERE USED OR RECOVERED	JOB OR EXCHANGE	QUANTITY	CHECK ONE COLUMN: USED ON JOBS	REMOVED—JUNKED OR ABANDONED	RECOVERED, PLACED IN STOCK, *NOTE CONDITION	ENTERED: ACCOUNTING CHARGE OR CREDIT ACCOUNT NO.
20 FT. CL. 9 C.P. POLE	ATMORE		2	X			241
OAK BRACKETS	"		2	X			241
#9 INSULATORS	"		2	X			243
#1c IRON WIRE (LBS)	"		10	X			243

*CONDITION OF RECOVERED MATERIALS OR EQUIPMENT. G—GOOD AS NEW F—CAN BE USED

Exhibit One—Materials Used or Recovered.



Dial equipment getting final check at a Western Electric factory.

BUSY... behind the lines

Today, telephone lines are defense lines—carrying the calls that speed production, direct civilian defense and guide the Armed Forces. At Western Electric we're busy making equipment that will further strengthen these lines of defense.

In addition, our specialized experience is being put to work making military communications and electronic equipment needed by the Armed Forces to keep our country safe.

Western Electric

TELEPHONE APPARATUS AND CABLE

Stays Up Extra Years

Because . . . . . .

★

It Has Heavier Coating of Zinc

Drawing of wire vertically through bath allows more zinc to hang on.

★

It Has Purer Coating of Zinc

Oxide scum on bath does not come in contact with wire — therefore zinc on wire is oxide free.

★

Core Is Made of Copper Bearing Steel

Small content of copper in steel makes it rust resisting.

• • • • • • • • • •

Standard Strength BB
High Strength BB

Keystone Wire

from

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

simplicity itself. Whenever the material is either paid for or vouchered (whichever way you do it in your company) the expenditure is distributed among the several plant and expense accounts to which the material applies. For example, your company receives 1000 feet of drop wire, and you are billed with a cost of, say $20. In a small company, the man in charge would probably know that half was going to be used to install new drops, and the other half to replace old ones. In that case he would charge (debit) the plant account for drops with half of the value ($10) and the proper expense account with the other half. And so on down through the entire list of things that a telephone company buys. At the time the material is paid for (or vouchered) the value is debited directly to the final plant, expense, or other account to which the material applies. This is a perfectly legitimate way of doing the job, and has the advantage of being simple, and of not requiring a lot of plant record keeping. For the small company, it is perfectly satisfactory.

But I believe you can see that as a company grows, this method loses practically all of its attributes. In-

(*Please turn to page 86*)

Coming Conventions

South Carolina Independent Telephone Association, Jefferson Hotel, Columbia, Oct. 29-30.

Virginia Independent Telephone Association, Roanoke Hotel, Roanoke, Nov. 1-2.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Nov. 7-8.

Georgia Telephone Association, Dempsey Hotel, Macon, Nov. 8-9.

Alabama Telephone Association, Jefferson-Davis Hotel, Montgomery, Nov. 12-13.

Missouri Telephone Association, Governor Hotel, Jefferson City, Nov. 12-13.

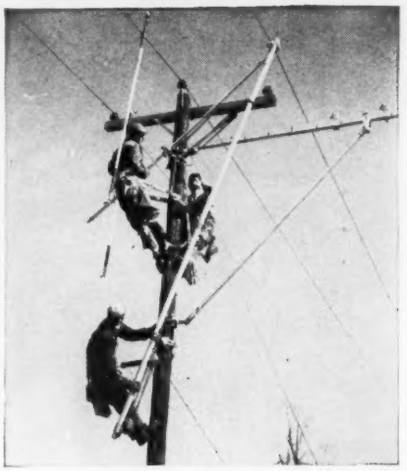
Florida Telephone Association, Sheraton Plaza Hotel, Daytona Beach, Fla., Nov. 15-16.

Texas Telephone Association, Gunter Hotel, San Antonio, Mar. 10, 11, 12, 1952.

Nebraska Telephone Association, Paxton Hotel, Omaha, Mar. 25-26, 1952.

Iowa Independent Telephone Association, Hotel Fort Des Moines, Apr. 8-9, 1952.

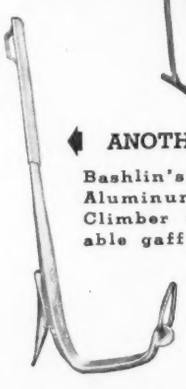
SAFE ON THE JOB



BASHLIN EQUIPPED!

Using
HOT LINE TOOL FACTORY DEMONSTRATORS

Men who think first of safety and efficiency on the job — use Bashlin Equipment.



ANOTHER FIRST

Bashlin's ALCOA alloy Aluminun Adjustable Climber with Removable gaff.

Self-locking screws assemble precision machined parts.

Write Today for Catalog No. 50

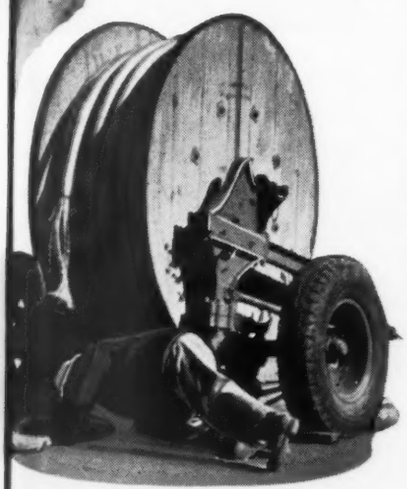
W.M. BASHLIN COMPANY
GROVE CITY 1, PA.

Complete OUTSIDE ENGINEERING, CONSTRUCTION and MAINTENANCE

Any Place in Continental America

Whatever your problem . . . where-ever it may be . . . we can help you plan, erect, repair or maintain your outside telephone plant.

Years of on-the-job experience working with independent telephone companies from coast-to-coast, the finest and most modern equipment, *PLUS* the know-how of trained and experienced crews assure you efficient, economical, long-lasting service. Proper engineering and construction methods can have a far reaching effect on your plant investment and it's operating efficiency.



From Main Distributing Frame to Phone Subscriber

Regardless of your location or the size of the project—be it new construction, repair, maintenance, or all three—we can do the job—above the ground or under the ground. Our highly trained personnel working in numerous crews in all sections of the nation are equipped with modern, top-quality construction and maintenance tools. We guarantee to do the job so it will last longer, cost less and operate more efficiently. Call us today!

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r Supply Division can supply you with the t materials . . . at prices consistent with top ality. We give you a complete service from start and follow through until the job is mpleted, approved and accepted. All the rk is done to A.T.&T. specifications unless erwise requested. We have the skill and ex-ience to do the job right. Let us give you e and cost estimates on construction, main-ance or repair jobs. No obligation. We're as r to you as your telephone. Call us now!

NEALE CONSTRUCTION CO.

ENGINEERING • CONSTRUCTION • MAINTENANCE

TOPEKA, KANSAS PHONE 4-2621

MATERIAL USED

EXCHANGE: ATMORE | DISTRICT | MONTH OF: AUG 19 51 | CODE NO. | ESTIMATE NO. | DIVISION | SHEET NO. 1

MATERIAL	COR. BATT. HANDSET	DROP WIRE 20 CL 9 C.P. POLE	D&A BRACKET #9 INSULATOR	#14 IRON WIRE	#12 IRON WIRE	10" PIN X ARM	DROP WIRE	
UNIT OF QUANTITY	EA	FT	EA	EA	EA	LB	LB	EA	FT	
QUANTITIES (LIST ALL MATERIAL USED)	1	200	*							ENTERED
				10	10		40			
			4		40			4		
	1	175								
	1	225								
			2	2	2	10				
	1	100								
	1									
	1									
	1	150								CHECKED
	1	150								
			8	16						
					16	100				
			4		32		160	4		EXTENDED
									100	
									200	
	231	233	241	241	243	243	243	241	605	CODE NO.
TOTAL	8	1000	18	28	100	110	200	8	300	
VALUE PRICE	21.00	.03	6.35	.11	.12	.15	.13	2.50	.03	TOTAL
VALUE AMOUNT	168 00	30 00	114 30	3 08	12 00	16 50	26 00	20 00	9 00	398 88

{INFORMATION ON THIS LINE POSTED FROM EXHIBIT 1

{INFORMATION IN THIS COLUMN POSTED TO EXHIBIT 3

(BELOW IS ENTRY FOR THE GENERAL LEDGER)

ACCT #	ACCT. NAME	DEBIT	CREDIT
122	MATERIALS & SUP.		$ 398.88
231	STATION EQUIPMENT	168.00	
233	DROP & BLOCK WIRE	30.00	
241	POLE LINES	137.38	
243	WIRE	54.50	
605	STATION MAINTENANCE	9.00	

---(ACCOUNT NUMBERS)

Exhibit Two—Record of Material Used.

stead of being simple, it becomes cumbersome; instead of not requiring any additional records, you'll find your plant man keeping thousands of notes on the backs of envelopes and other scraps of paper; and instead of the accuracy which, when the company was small, was within a few percentage points of perfect, the method gets more and more inaccurate as time goes on.

So about that time, it is wise to begin to look around for something else. And the best answer anyone has come up with yet is the Material and Supply Account. This is an account in your General Ledger, just the same as "Cash" and "accounts receivable"—and it is a current account—that is, the value in the account can be included with your other "Current Assets". The theory behind this is that if you sold out tomorrow, you, or someone else, could dispose of the materials and supplies and receive the amount of money for them that is carried in the account. The reason I have gone into this explanation of theory is that it is at least a partial hint as to how the account should be kept—in other words, values represented in the account should be real values, as near as it is practically possible to keep them.

The Material and Supply Account is debited with the value of materials received, and is credited with the value of materials used, sold or junked. Stated in another way, when you receive material from a supplier, the value of the material is debited to the Material and Supply Account (and credited to accounts payable or cash, of course). Then, when the material is put to use, the Material and Supply Account is credited with

(Please turn to page 96)

ITEM POLE, CREOSOTED PINE, 20 FT. CLASS 9

UNIT EACH

DATE	FROM WHOM RECEIVED HOW DISPOSED OF POSTING SOURCE	RECEIVED OR RECOVERED QUAN.	RECEIVED OR RECOVERED VALUE	USED OR SOLD QUAN.	USED OR SOLD VALUE	BALANCE ON HAND QUAN.	BALANCE ON HAND VALUE	UNIT VALUE
1951 1-31	VOUCHER 2380	20	120 00			20	120 00	6 00
1-31	FREIGHT		10 00			20	130 00	6 50
1-31	LOADING		5 00			20	135 00	6 75
1-31	JAN. SUMMARY SHEET			4	27 00	16	108 00	6 75
2-28	FEB. " "			6	40 50	10	67 50	6 75
3-31	VOUCHER 2402	40	250 00			50	317 50	6 35
4-30	APR. SUM. SHEET			10	63 50	40	254 00	6 35
8-31	AUG. " "			18	114 30	22	139 70	6 35

Exhibit Three—Material and Supply Record.

Construction a

With the Doub and America a

cook type 7

high-potential lightning arrester

Outdoor pole type arrester p vides lightning protection atmospheric static drain for pairs of open-wire circuits, or drop wires and cables leadin unprotected terminals.

Equipped with:

1. Single piece molded Bakelite lation and fanning strip for stre and high resistance. Fanning is closed with a thin film of lite until drops are run.
2. Non-corrosive metal hood, dur studs and galvanized mou bracket for long service life.
3. Phosphor-bronze spring clip accommodate Cook Tru-Gap grounding lightning discharg

STROMBERG Telephone CARLSON

TELEPHONES, SWITCHBOARDS • SO

...aterials and Supplies...

...arantee of Stromberg-Carlson ...ading Manufacturers...

crapo

guy and messenger galvanized strand

The superior tensile properties inherent in steel are used to full advantage in *Crapo* Galvanized Strand. The tightly adherent zinc coating applied by the *Crapo* Galvanizing Process provides lasting protection against corrosion, and prolongs the life of the strand. Controlled ductility makes *Crapo* Strand easy to work and to serve. Low first cost and low yearly cost result in important economies for operating companies.

The all-round dependability of *Crapo* Galvanized Steel Strand is being demonstrated constantly by its outstanding performance in service. There is a size and grade for all practical needs.

LONG LIFE—LOW COST

ANSONIA Ankoseal

the modern, all-plastic, lightweight telephone cable...

saves three ways—

1. Lower first cost
2. Lower installed cost
3. Lower maintenance cost

Available for aerial, duct and direct burial use. For complete information contact your nearest Stromberg-Carlson Field Office.

THE ANSONIA ELECTRICAL COMPANY

Subsidiary of Noma Electric Corporation
Ansonia, Connecticut

kennecott telephone cable

is pre-tested to operating company requirements

Before a single inch of Kennecott cable leaves the mill, it is tested for Dielectric Strength, Insulation Resistance, Conductor Resistance, Capacitance and Fixed Dimensions. Such care in manufacture is your warranty of efficient, trouble-free performance in the field. Specify "Kennecott"—distributed by Stromberg-Carlson.

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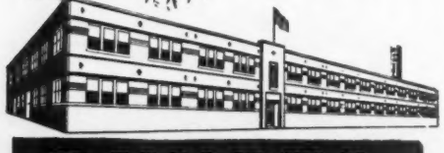

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Questions And Answers

In this issue Mr. Mitchell discusses—(1) Grounded Phantom (Simplex) Circuit, (2) Drainage Filter for Supply Circuit Induction, and (3) Cross rings on Kick Coil Lines.

By Jay G. Mitchell

QUESTION:—I am building a five mile metallic line and would like to take a phantom grounded line on six miles farther. Enclosed you will find a diagram by you. Arrows point to metallic line on one side and to switchboard on the other side which I suppose completes the physical metallic line.

The $64.00 question with me is where to take off for the grounded phantom line for the switchboard. I am enclosing self addressed envelope and will appreciate it very much if you will mark same on the diagram and mail back to me.

ANSWER:—When the grounded phantom circuit is to be connected to the switchboard the arrow marked "TO GROUNDED LINE" is the line terminal and is to be wired to its proper jack in the switchboard. At the outer terminal of the metallic circuit an exactly similar repeating coil installation must be made and *at that repeating coil* the wire shown in the diagram and having the legend "TO GROUNDED LINE" is to be the beginning of the grounded telephone line from that point on out.

Otherwise the suggestions for the installations of these two repeating coils are as they were given in the original inquiry. If this is still not clear please write in again.

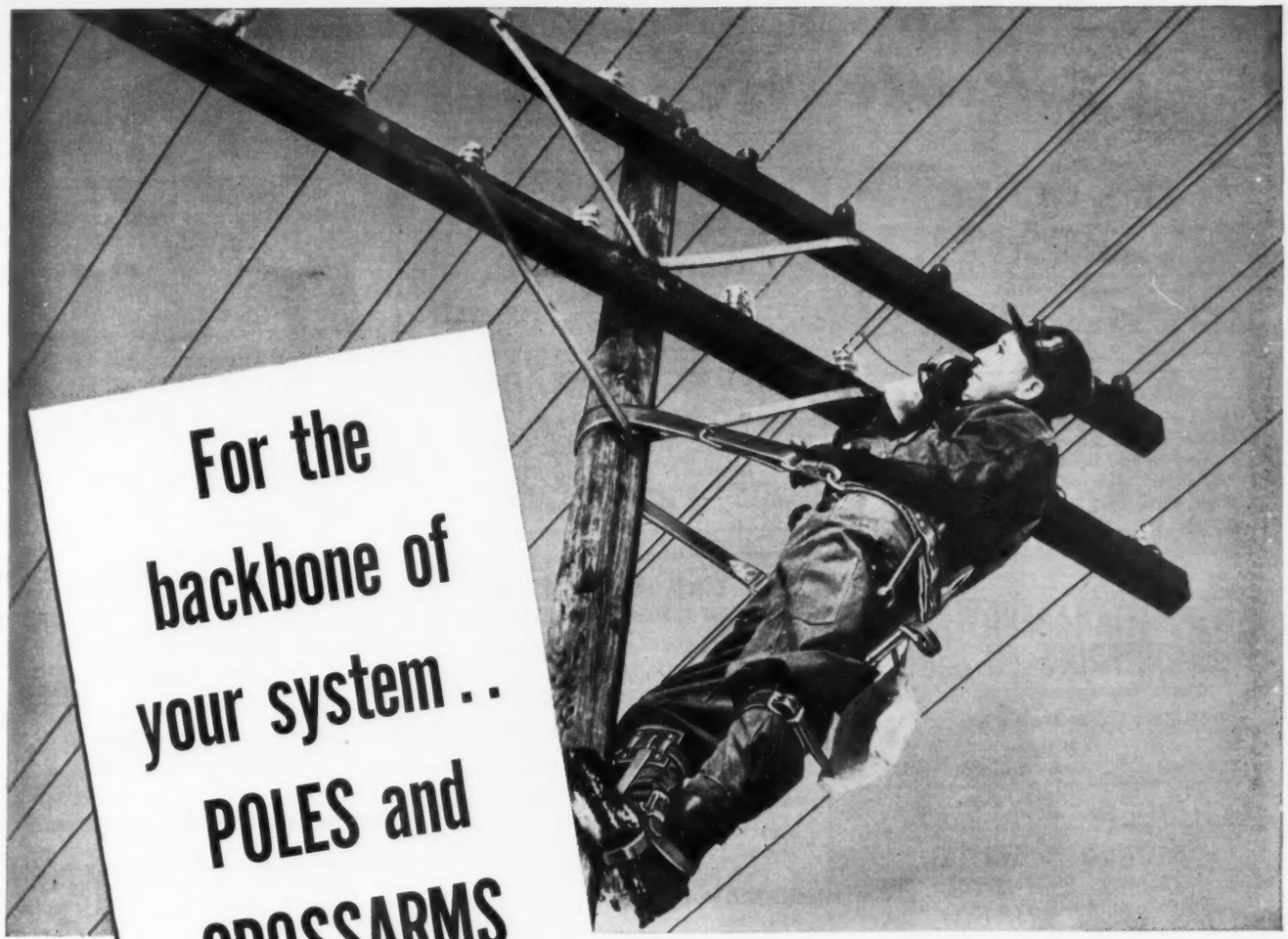
Jay G. Mitchell

QUESTION:—Would you please draw me a sketch showing how to make a "home made" filter like the Western Electric Number 108-A type to filter R. E. A. noise off of my metallic farm line. I have done everything possible but still have some noise. Do you place them in the center of close parallel stretch?

ANSWER:—The use of "home made" filters for this purpose is not recommended because of the possible, but not inevitable, hazards involved in the operation of draining static or other induced voltages from telephone circuits included in a parallel with disturbing supply or other circuits.

The inquiry does not provide any information as to the voltage of the induced current nor as to the length of the parallel nor the separation between the disturbed telephone circuit and the R.E.A. circuit. In a situation of this sort it is necessary to make a careful analysis of all the conditions in order to formulate any rec-

(*Please turn to page* 91)



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Questions and Answers

(*Continued from page* 88)

ommendations for remedial measures. It is also noted that this correspondent desires to drain off the noise from his metallic farm circuit. Filters of this type mentioned afford a path to ground, when properly installed, from each side of a metallic telephone circuit which is of sufficiently low impedance to pass the 60 *cycle* induced currents but of sufficiently high impedance to conserve the greater portion of the telephone voice current. It is suggested that you send in a sketch showing the layout of your disturbed metallic telephone line, the R.E.A. circuit that you believe is causing the disturbance and the A.C. voltage between the two wires of your metallic telephone circuit at several points throughout its length. The number 108-A protector is designed to hold the induced voltage to less than 50 volts for exposure up to about ten miles in length. Please send in the additional data if possible. It should be noted that 60 cycle induced voltage on a telephone line is not always noise causing but is always a possible source of other hazards.

QUESTION:—I am using kick coils and common battery telephones on some of our lines. Some times when we ring a number a drop will ring down some where else on the switchboard. Sometimes the two telephone lines are not even in the same cable.

Is a bank of four six volt batteries suitable battery for kick coil operation?

ANSWER:—This inquiry comes from a telephone company which is probably operating grounded telephone lines. If that is the case the trouble is due, in all probability, to a defective common ground connection at the switchboard. At any rate the ground connection should be examined and placed in first class condition. About three long ground rods should be driven in a permanently moist location not less than *ten feet or more apart* and should be connected with each other by a good solid copper wire securely soldered to each and connected with the exchange ground.

The battery that supplies the current to the line side of the kick coils should be connected to ground with

(*Please turn to page* 99)

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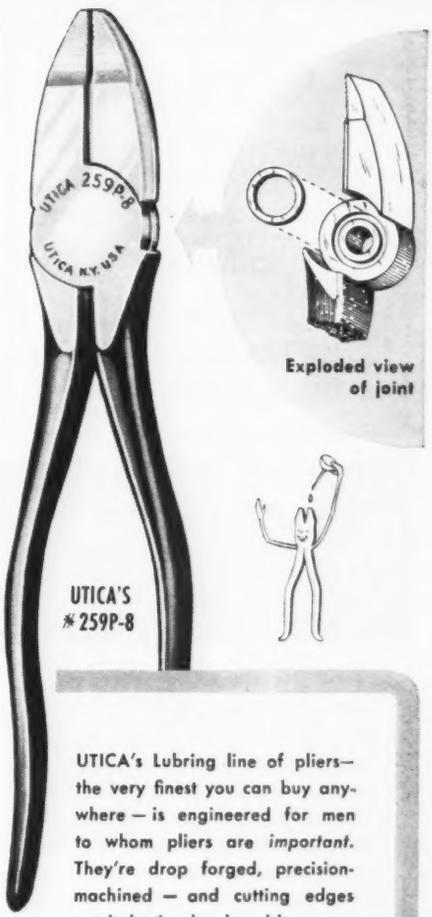

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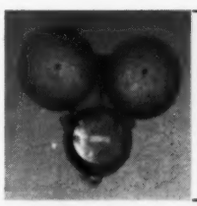

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GENERATORS—A. C. power anywhere with "Katolight" plants and generators. Kato Engineering Co., 131 Maxfield Ave., Mankato, Minn.—[ADV. 23]

FURNACES—For quickly and economically melting lead and paraffin—Mutual Liquid Gas Equipment Co., Inc., 3600 W. Imperial Highway, Los Angeles, Calif.—**[ADV. 24]**

INSPECTION SERVICE—For poles, crossarms, and preservative treatments. Inspectors stationed throughout U.S.A. A. W. Williams Inspection Co., Mobile, Ala.—**[ADV. 25]**

INSULATORS, Porcelain—Porcelain Products Inc., Box 300, Findlay, Ohio.—**[ADV. 26.]**

JACKS, for lifting Cable Reels, Pulling Poles and Maintenance Work. Duff-Norton Mfg. Co., 1710 Preble Ave., Pittsburgh 12, Pa.—**[ADV. 27]**

LIGHTWEIGHT PULLERS—Coffing Hoist Company, 800 Walters St., Danville 5, Ill.—**[ADV. 28]**

PIPE PUSHERS—Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.—**[ADV. 29]**

PIPE PUSHERS—Greenlee Tool Co., 2136 12 St., Rockford, Ill.—**[ADV. 30]**

PINS & BRACKETS—Mfrs. of all sizes of Locust Pins and Oak Brackets, The Locust Pin Co., Inc., Front Royal, Va.—**[ADV. 31]**

POLE HOLE DIGGERS—For derrick mounted trucks. Tel-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.—**[ADV. 32]**

POLES—Cedar poles and Fir cross arms. R. G. Haley & Co., Inc., Spitzer Bldg., Toledo 4, Ohio.—**[ADV. 33]**

POLES, Southern Yellow Pine—Colfax Lumber & Creosoting Co., Inc., P.O. Box 23, Pineville, La.—**[ADV. 34]**

POLES, Creosoted Southern Yellow Pine and Douglas Fir. The Long-Bell Lumber Company, Wood Preserving Div., R. A. Long Bldg., Kansas City, Mo.—**[ADV. 35]**

POLES, Southern Yellow Pine—Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.—**[ADV. 36]**

POLES, Southern Yellow Pine—Texas Creosoting Co., Orange, Texas.—**[ADV. 37]**

POLES—Texas Best pressure-creosoted poles, Lone Star Creosoting Co., P. O. Box 9, Longview, Texas.—**[ADV. 38]**

POLES—Western Red Cedar, Western Larch, Lodgepole Pine. B. J. Carney & Co., Minneapolis 3, Minn. and Spokane 8, Wash.—**[ADV. 39]**

POLES & CROSS ARMS—Creosoted poles and crossarms. Conroe Creosoting Co., Conroe, Texas.—**[ADV. 40]**

PROTECTIVE EQUIPMENT—Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.—**[ADV. 41]**

GAS-TITE CABLE TERMINALS—Sub station protectors, main dist. frames; central office protectors; interior junction boxes; lightning arrestors.—Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.—**[ADV. 42]**

PRINTING—Telephone forms, Cullom & Ghertner Co., 600 21st Ave., Nashville 4, Tenn.—**[ADV. 43]**

PAPER, GRAPH—Free samples of arctangent coordinate graph paper and of the "Arktan" bulletin.—Orbit Electric Co., 2710 N. Menard Ave., Chicago 39, Ill.—**[ADV. 44]**

REBUILT TELEPHONE & SWITCHBOARDS—Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 2, Ill.—**[ADV. 45]**

SIGNAL FLASHER—Portable electronic signal flasher emits sharp, brilliant flash of light clearly visible for approximately one mile.—Haledy Electronics Co., 57 William St., New York 5, N. Y.—**[ADV. 46]**

SUPPLIES—New all metal heavy duty extension loud ringers; ready wire reels, payout only and payout and takeup in one.—Suttle Equipment Co., Lawrenceville, Ill.—**[ADV. 47]**

SWITCHBOARDS, TELEPHONES, ETC.—Automatic Electric Co., 1033 W. Van Buren St., Chicago, Ill.—**[ADV. 48]**

SWITCHBOARDS, TELEPHONES, ETC.—The North Electric Manufacturing Company, Galion, Ohio.—**[ADV. 49]**

TELERING—Telephone ringing by frequency conversion. Voltage range for all purposes, central office and private branch exchanges. Telkor, Box 186, Elyria, Ohio—**[ADV. 50]**

"TEMPEROMETER"—The Dillon Temperometer is one of the specialized types of dial thermometer line. A complete catalog is available.—W. C. Dillon & Co., Inc., 1421 S. Circle Ave., Forest Park, Ill.—**[ADV. 51]**

TRUCK BODIES—Highway Trailer Co., Edgerton, Wisc.—**[ADV. 52]**

TRUCK BODIES AND EQUIPMENT—McCabe Powers Auto Body Co., 5900 N. Broadway, St. Louis 15, Mo.—**[ADV. 53]**

WIRE DROP & INSIDE—Jackets of neoprene, rubber or plastic. Lowell Insulated Wire Co., Lowell, Mass.—**[ADV. 54]**

WIRE, Insulated—DATED DROP WIRE—Neoprene or Weatherproof—Alphaduct Wire & Cable Co., Milltown, N. J.—**[ADV. 55]**

WIRE, Insulated Drop and Bronze or Copperweld—Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.—**[ADV. 56]**

WIRE, Insulated Drop, Genuine Ironite—Paragon Electric Co., Two Rivers, Wis.—**[ADV. 57]**

WIRE, Insulated Drop, HT Bronze, Paraprene or Braid Insulation—Paragon Electric Co., Two Rivers, Wisc.—**[ADV. 58]**

WORK BENCH—Natkin Built "Scotty" Work Bench is of all-steel construction.—Natkin & Co., 1601 S. Hanley Road, St. Louis 17, Mo.—**[ADV. 59]**

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NP 359..... NP 360.....

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Company .....

Street Address .....

Town ..... Zone..... State.....

"What? Only 16 poles to the mile?"
Crapo HIGH TENSILE TELEPHONE LINE WIRE
COMPARE THE SPAN LENGTHS!
SIZE NO. 12 B.W.G. HEAVY LOADING DISTRICT
Crapo HTL-135
SPANS TO 350 FEET
Crapo HTL-85
SPANS TO 225 FEET
B.B. GRADE
SPANS TO 150 FEET
INDIANA STEEL & WIRE CO. MUNCIE, INDIANA

Crapo High-Tensile Line Wire Cuts Cost of Rural Lines

Spans to 350 feet are possible in Heavy Loading Districts where Crapo HTL-135 Telephone Line Wire is used. This means that, in straight runs over flat open terrain, the number of poles per mile can be reduced to 16.

Substantial economies both in construction and maintenance are the result. Initial building costs are lower because of marked savings in material and labor. Upkeep expense is reduced because there are fewer pole structures to maintain. Service interruptions are minimized because Crapo High-Tensile Line Wire offers increased resistance to ice and wind, provides a greater margin of safety.

Crapo High-Tensile Telephone Line Wire is available for prompt shipment from jobbers' warehouse stocks or from our mill.

FURNISHED IN TWO STRENGTHS

Crapo HTL-135 Telephone Line Wire has two-and-one-half times the strength of standard B.B. wire; makes possible spans of 350 feet in Heavy Loading to 500 feet in Light Loading districts. Crapo HTL-85 (No. 12 B.W.G.) has 60% greater strength than B.B. wire, provides for spans of 225 feet in Heavy Loading, 375 feet in Light Loading areas. Both have telephonic transmission qualities superior to B.B. wire.

WRITE FOR VALUABLE ENGINEERING MANUAL!

Be sure to get a copy of this helpful guide to long-span low-cost construction! Ask your distributor of Crapo Galvanized Wire and Strand or write direct for Manual No. 203!

INDIANA STEEL & WIRE COMPANY · MUNCIE, INDIANA

Small Company Talk

(Concluded from page 86)

the value of the material used, and debited to the plant or expense account the material was actually used for.

As with so many other statements about accounting, it is easy to tell somebody what to do, and it may be hard for them to figure out how to do it. And, when you take on a Materials and Supply Account, there is a good deal more to it than just that. Because the *how* involves several other records. First of all it involves a subsidiary ledger usually called a "Material and Supply" *Book*. In this book there will be a page for each separate item of material that you have on hand. Also, the use of the account involves the reporting of materials used, so you must have some sort of a daily or weekly "Material Used" sheet. And, since all these sheets must be compiled at the end of the accounting period, whether it be monthly, quarterly, or what-have-you, you need some sort of a "Summary Sheet" on which to compile the information from the several "Material Used Sheets".

Exhibit one is the Daily "Material used sheet" that we use in our company. It is a standard form (#150) of the Suttle Equipment Company, although any form embodying approximately the same information is satisfactory. This form is filled out by the plant men daily, so that they won't forget what materials they have used that day. (On the opposite side of this form is a daily time report on which the number of hours worked, and doing what, is recorded. The opposite side also has places for the man's name and the date.) The information contained on exhibit 1 indicates that on that day, the man used 2 20 ft., class 9 creosoted pine poles; 2 oak brackets; 2 #9 insulators, and 10 lbs of #14 iron wire.

At the end of the month, this sheet and all the other sheets for the same month (since we do our accounting on a monthly basis) are posted to the Material Used Sheet (*exhibit two*).

The information from *Exhibit one* has been posted on line 6 (the line blocked in) on *Exhibit two*. The other lines on *exhibit two* are supposed postings from other daily material used sheets. The totals of the different columns on *exhibit two* are, therefore, the totals of the material used. For example, there were 8 Common Battery Handsets used during the month, 18 20 ft. Cl. 9 creosoted pine

poles, 100 #9 insulators, etc. After the columns are totaled, the "value" lines at the bottom of the sheet have to be priced and extended. The prices come from the Material and Supply *Book* (the subsidiary ledger, you remember, which has a page for each item of material you have on hand).

Now refer to *exhibit three*, the next to the last line which is filled in, and you will see there, "4-30, Apr. Summary Sheet, 10, 63.50, 40, 254.00, (and the last figure) 6.35." That $6.35 is what you are looking for, for it tells you that all of the poles that you have in stock of this size are valued at $6.35. You take this $6.35 figure back to *exhibit two* in the column that reads 20 ft., cl. 9 c.p. Poles, and place the $6.35 figure on the line designated as "price"; then multiply the $6.35 price by the 18 poles used and you have an "amount" figure of $114.30. The price of $21.00 for the handsets, and 3 cents for the drop wire, and the other prices were obtained from other sheets in the Material and Supply Book.

This pricing and extending is completed for all the items used during the month. Then the "amounts" are totaled and the total figure ($398.88 in this case) is placed in the proper place over in the lower right hand corner of the sheet.

The next job is posting the information in the Material and Supply Book, of which *exhibit three* is one sheet, for one item, 20 ft. cl. 9 creosoted pine poles. The date, Aug. 31, 1951 (8-31) is placed in the date column; where the information came from (August summary sheet) in the next column; the number of such poles used during the month (18) in the "Used-quantity" column; the value of these 18 poles ($114.30) in the "Used-value" column. Then the line is completed as follows. The last previous entry in the "Balance on Hand" column showed 40 poles on hand worth 254.00, or $6.35 each. Since 18 poles have been used this month, there are now only 22 poles left on hand (40 less 18) and these 22 poles are worth $139.70 ($254.00 less than $114.30). The value of $139.70 is then divided by 22, and the answer (still $6.35) is placed in the "Unit Value column". This same sort of procedure is followed with each item used during the month, so that after the posting to the Material and Supply Book is completed, each sheet in the book will show how much of each item of material is still supposed to be on hand.

Now, still studying the *exhibit three* sheet for poles, let's go up to the top line which is dated "1951, 1-31". This

(*Please turn to page* 98)

ACORN INSULATED WIRE

Quality WIRE for Every Telephone NEED

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DROP WIRE
BRIDLE
SWITCHBOARD
TREE
GROUND
BURIED WIRE

INTERIOR
POTHEAD
CABLE TERMINAL
INSTRUMENT
FIXTURE
PLASTIC INSULATED

ACORN INSULATED WIRE COMPANY, INC.
36 Freeman St., Pawtucket, Rhode Island
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ACORN'S exclusive Carton packaging preserves carefully developed QUALITY until installed . . .

Drop Wire—Bridle—Interior—Tree—Ground—Switchboard—Pothead—Cable Terminal—Instrument—Fixture—Buried Wire

New "325" Attachment . . . Derrick and Digger Unit

For 3/4 and 1-TON TRUCKS

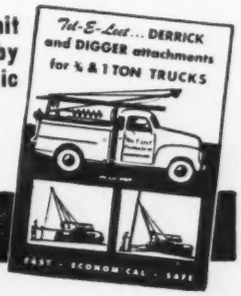
Now your regular telephone service truck can be put to the added use of pole setting. Normally it will take two men less than ten minutes to set up the derrick, attach the digger, dig the hole and set the pole—all ready for tamping. It's all accomplished with the Model 325 Derrick and Digger Attachment, made to fit all service trucks as illustrated.

Write for fully illustrated Bulletin 325.

★ Answers the need for a two man construction crew

★ Sets poles up to 35'; takes augers 8" to 20" diameter

★ Packaged unit for installation by your local mechanic



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FULL LENGTH TREATED NORTHERN WHITE CEDAR

P & H Treatment insures against Sapwood deterioration and termites.

Uniform results of Penta treatment assured by laboratory control—proven by ten years use.

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PERSONALIZED SERVICE

line shows that in January, on voucher 2380, we received 20 poles from a supplier at a cost of $120.00. Thus the balance is 20 poles at $120.00 and the unit value is $6.00. However, we also had freight and handling costs of $10.00 and $5.00, and by the time we add these in, we still have 20 poles, but their total value is now $135.00 or $6.75 each. In January we used four poles (the entry on the fourth line) @ $6.75, or $27.00, leaving a balance of 16 poles on hand valued at $108.00. Later on in March (entry on line 6) we received 40 more poles at a delivered-to-yard cost of $250.00. 10 poles valued at $67.50 were left from the first delivery, so we now have 50 poles on hand (10 plus 40) valued at $317.50 ($67.50 plus $250.00), for a new unit value of $6.35.

Values in the material and supply book are usually averaged in this manner because it would be too difficult to do it any other way. If you remember your bookkeeping courses, this book comprises what accountants call a "perpetual inventory"; it just keeps going on and on, and tells you at any time, how many of a certain item you should have on hand.

Now let's go back again to *exhibit two*. On the next to the last narrow line you see some figures in typewriting. These are account numbers, and indicate the account number to which that particular item should be debited. The account numbers shown happen to be Class B account numbers. The eight handsets which were used during the month were put into service and therefore go into this plant account. The drop wire listed in column 2 was used to install new drops and is thus chargeable to the appropriate plant account. In the last column, it will be noted that "drop wire" is listed again, but that the account number of that column is 605, or, in "B" accounting, "Station Maintenance"—here used to indicate a replacement of an existing drop. Tracing back still further to exhibit 1, it will be noted in the last column that the man making out the material used sheet indicated the accounts to be charged in the last column of the daily form.

Also in typewriting on *exhibit two* is the General Journal entry derived from that sheet. Since all of the materials used were taken out of materials on hand, the total $418.28 is credited to the Materials and supply account, and debits are made according to the account numbers listed in the different columns.

Thus, through this general ledger entry, the proper accounts get charged

and credited, and, through the material and supply book, the quantities and values of items on hand are kept up to date.

It will thus be seen that if you go through your material and supply *book* and add up all the balance on hand values shown by the last entry on each sheet, you should get the same figure that is in your material and supply *account* as of that date. For the *book* is simply a breakdown of the *account*, the book listing the quantity and value of each separate item, and the account showing only the total value on hand of all material and supply items.

In case this discussion of the Material and Supply Account has struck a responsive chord with you, it would be a good idea to keep this article and use it in conjunction with at least two more articles on the same general subject. In this article we have discussed only the material *used* aspect of the problem. In the next article will be discussed the material *displaced* and material *recovered* side of the question, and then both will be followed by a discussion of a general nature as to just what items can be placed in the material and supply account, which should not, etc. —THE END

Questions and Answers

(*Concluded from page* 91)

a good solid soldered connection at the positive terminal. Four six volt storage batteries in series affording at least 24 volts are adequate for the operation of kick coil telephone circuits but they must be *maintained in a charged condition*. Since this inquiry does not indicate that the kick coil circuits are not operating satisfactorily on calls incoming to the switchboard it is probable that the present batteries are satisfactory. Care must be taken to keep them charged and the electrolyte must not be allowed to become low in the battery jars.—THE END.

LEEDS & NORTHRUP: Revised Catalog

TO DESCRIBE the design and construction features of high-precision Wenner Potentiometers, Leeds and Northrup Co. has published a newly-revised, 16-page catalog, "Wenner Potentiometers"—Catalog EH22(2).

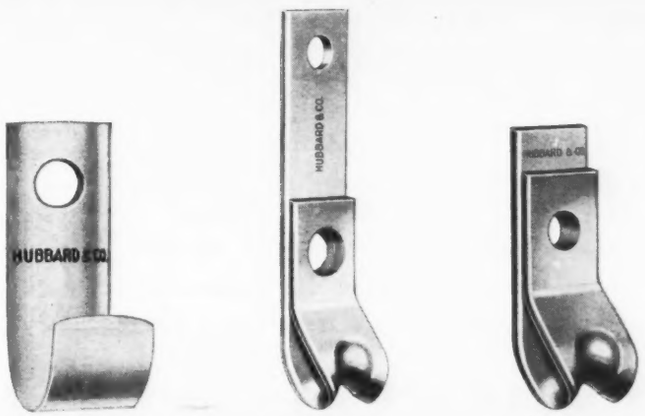
The publication discusses both the low range instrument—used primarily for precision measurement of ther-

(*Please turn to page* 100)

HANG THE LOAD ON HUBBARD HARDWARE

HUBBARD GUY ATTACHMENTS

Hot Galvanized



No. 7584 No. 6001 No. 6004

Hubbard makes a complete line of Guy Hooks and Attachments to meet the great variety of needs and requirements of various operating companies. Included is a range of sizes in light and heavy "regular" guy hooks, crossarm guy loops, and the "closed" type storm guy attachments in steel and malleable iron. To give the strand a safe bending radius all styles are constructed with rounded wire-grooves. Write for detailed descriptions or call the Hubbard Distributor nearest you.

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OVERHEAD

Cable Suspension Material—Wireholders
Pole Seats and Balconies—Clevises
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REA Telephone Hardware

UNDERGROUND

Cable Racks—Manhole Ladders and Steps
Pulling-in Irons—Expanding Anchors
Cable Shields—Screw Steelwing Anchors
Anchor Rods—Ground Rods and Clamps

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ESTABLISHED 1843
PITTSBURGH • CHICAGO • OAKLAND, CALIFORNIA
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FOR *All* TELEPHONE REQUIREMENTS

LONG LIFE

Neoprene Jacketed
Drop and Bridle Wire

Weatherproof Braided Drop and Bridle
Interior - Tree - Ground - Switchboard -
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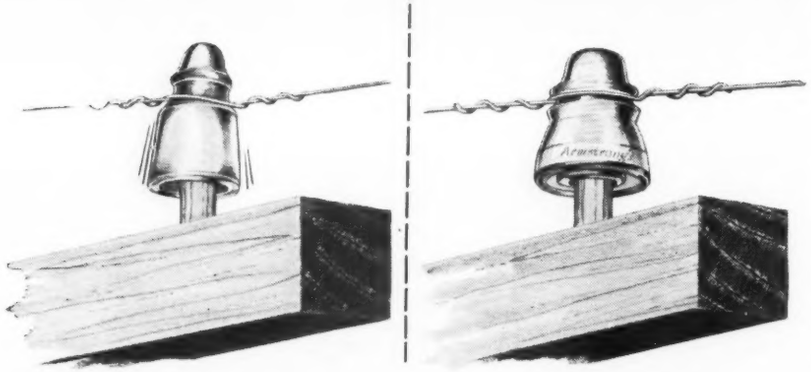

No rocking on the pin . . . But a good snug fit

Armstrong's Glass Insulators can be depended upon to fit pins perfectly. That's because they're pretested with a precision gauge for accurate pin-hole size and thread contour.

Made of highly inert glass, these insulators are weatherproof. They stand up under loads that bend standard metal pins—resist thermal shocks far more severe than any encountered in service.

Get further information on Armstrong's Glass Insulators from your distributor or write to Armstrong Cork Company, Glass and Closure Division, 295 Fifth Avenue, New York 16, New York.

ARMSTRONG'S GLASS INSULATORS

for communications . . . for power

mocouple voltages—and the high range, or standardizing potentiometer, used for accurate voltage measurement up to 1.9111 volts. It also traces the circuit development of each potentiometer from the basic Wenner principle. External and internal illustrations of the potentiometers are given, annotated to indicate special construction features.

A copy of Catalog EH22(2) will be sent upon request. Address Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia 44, Pa.

HIGHWAY TRAILER: Ronald E. Hull

THE PROMOTION of Ronald E. Hull to the position of Sales Manager of the Utility Division of Highway Trailer Co., Edgerton, Wisc., has been announced by L. E. Craig, vice president and director of sales.

In his new capacity, Mr. Hull will be responsible for the sale of Highway's complete line of public utility truck bodies, pole trailers, cable reel trailers, earth boring machines, winches and power take-offs.

For the past eight years Mr. Hull has been with the Highway Trailer Co. as Utility Service Manager and Utility Sales Engineer. Before joining Highway, he was with the General Motors Corp.

COPPERWELD STEEL CO.: Purchases Flexo Wire Co.

COPPERWELD STEEL CO., Glassport, Pa., has purchased all the outstanding stock of Flexo Wire Company, Inc., Oswego, N. Y. Flexo has been a producer of small and fine sizes of Copperweld, copper and bronze wires and cables with a capacity somewhat greater than one-half million pounds per month.

The Flexo Wire Co. will be operated as a wholly owned subsidiary of Copperweld. Flexo's production facilities will be utilized by Copperweld for the immediate production of small and fine sizes of copper-saving Copperweld wires and cables for the electronics and electrical appliance industries.

According to Frank R. S. Kaplan, president of Copperweld, Flexo also will continue to produce certain sizes and types of copper and bronze wires and cables.

Copperweld's action in acquiring Flexo's business is indicative of growing interest in Copperweld wire as a copper-saving alternate for copper in pigtail leads for condensers and resistors, hook-up wire and power cords for radio and television sets.

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THE BACK OF THE BOOK

By John G. Reynolds

"S" For Siesta. . . .

MANY UNUSUAL suggestions for innovations in the telephone directory have been received by telephone directory people, but none of them has been topped by one reported by Southwestern Bell at Corpus Christi, Texas. There a newspaper columnist, taking up a local citizen's proposal, advocated that the town adopt the old custom of a noon time nap and that those in favor organize a siesta club. To insure that members would not be disturbed by telephone calls while snoozing, the nap boosters asked the telephone company to print an "s" in the directory beside the name of each siesta addict.

• • •

Blue Plate Special. . . .

REMEMBER THE Blue Plate Special—French fries, meat loaf, rolls, pie and coffee for 35 cents? Ohio Bell in a monthly bulletin recalls more about the "good old dollar" and how it has shrunk.

The bulletin says: "*It's been a dozen years since women could buy 50-cent hosiery and 30-cents-a-pound coffee. Food is 134 per cent higher than 11 years ago; clothing is up 100 per cent. Until recently, there didn't seem to be any limit on how high prices could climb—except the price of telephone service which has gone up an average of only nine per cent.*"

But there's no "blue plate special" on the price of things that telephone companies buy, the bulletin adds. Poles cost 125 per cent more than they did 11 years ago; lead used on cables has tripled in cost and the price of wire has more than doubled.

• • •

Bell System Stepson. . . .

THE BRAWNY young chap staring at you from the front cover of practically every Bell System directory is, we learned just the other day, something of an adopted son. Even his name "Spirit of Communication" turns out to be an alias.

The Bell directory figure is a drawing of the statue atop the AT&T headquarters in New York. Designed in 1916 by Evelyn Beatrice Longman, young Mr. Biceps was originally christened "The Genius of Electricity." His more intimate friends referred to him—out of Miss Longman's hearing, we trust—irreverently as "Eleck" or "Alec." Cast in bronze, the figure is intended to express the power and speed of electricity and its service to mankind. That's also a pretty good description of modern telephone service, so "Eleck" has become the Bell System's cover boy.

Just in case you're interested, the original statue is 24 feet high and weighs 16 tons. No statistics are available on the original model.

• • •

A Good Place to Work. . . .

A CERTAIN YOUNG Chicago gentleman has learned that more than Gospel gets into print. It seems that one of the city's newspapers suffered a slight brainstorm and included an Illinois Bell ad for operators in the "Male Help Wanted" column.

Into the Employment Office—Women, strode a pleasant young fellow of about 25. With a somewhat self-conscious laugh, he produced a copy of the ad. Probably a mistake, he admitted, but if this were a new Illinois Bell policy, he'd like to put in his application for a job as operator.

It was indeed a mistake, employment people agreed. Since 1898, when Isabelle Naunsell was hired as an operator, Illinois Bell has been pretty well satisfied with the girls as Traffic employees.

• • •

Fish Story . . .

MAGNETO telephones are being used by folk in Hugo, Okla. to put a mess of fish on their tables—and not by calling the corner market.

They are telephoning for fish—and getting them on the end of their lines.

The fishermen don't get a "number please" from an operator when they crank the telephones.

This fishing is based on sending an electrical charge through the water and shocking the fish into unconsciousness.

Haskell Watson, a state game and fish ranger, says there's no trick to making the gear in this atomic age.

The fisherman takes the telephone, extends two wires out of it, attaches them to two large squares of screen—and then he's ready to fish.

The screens are dropped to the bottom of a lake or stream. Then the angler gives a couple of healthy cranks on the phone.

"After the shock," Watson says, "the fish come to the top like wild Brahma.

"The fish jump to the top of the water," he adds, "and the rodless angler nabs them in a net."

Watson says there's no accurate way to measure the number of fish being landed by the telephone route.

"But," he explains, "when they catch from 300 to 400 pounds a day, you know an awful lot of fish are being pulled out of southeast Oklahoma streams."

And the magneto telephones are a premium in the area since the new fad in fishing began a month ago.

"Between 75 and 100 telephones are being used to fish here now," he says.

Then he adds:

"It has been reported that in some areas, the owners take the telephone off the wall, go fishing, and then return to install the telephone and call their neighbors to tell about the catch."

The ranger says it's legal to catch all but game fish by the new system.

Undersheriff Bob McDonel says no complaints have been filed.

"That's probably," he explains, "because everyone who can get a telephone has gone fishin'."

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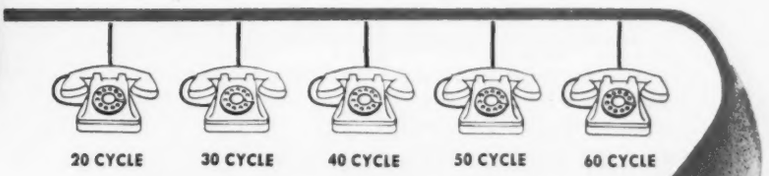

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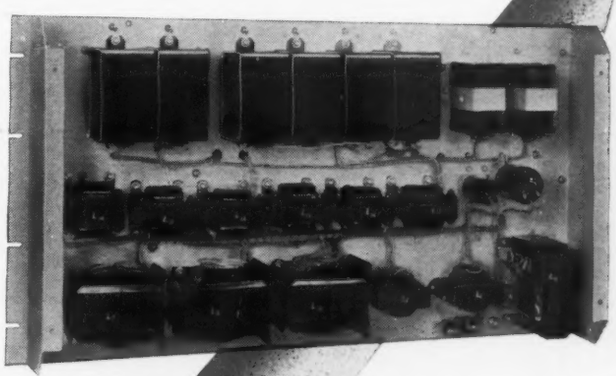

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General Telephone Directory Company
1220½ Texas Avenue
Lubbock, Texas

Dear Mr. Stigall:

We are very glad to report that we have now received and distributed the new telephone directories for our Killeen, Texas, exchange.

We are even more pleased with this second issue than we were with the first. As you know, prior to the publication of our directory by the General Telephone Directory Company, the printing was handled by a local firm. Under our agreement with this firm, we received our directories with no remuneration whatever from directory advertising. However, with the first directory published for us by your company, we received 22.5 per cent of the gross advertising billing. Our new directory carries a considerable increase in advertising billing and our percentage of this billing has increased to 32.5 per cent.

These figures, along with the fact that we are now receiving a standard error-free directory with excellent printing and composition, are very commendable of the service which has been rendered us by your company. The conduct of your sales representatives has always been beyond reproach and they have been of invaluable assistance in helping us to build good public relations in our exchanges.

We are looking forward to a long and profitable association for both our companies.

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W. S. BAIN
President

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